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ABSTRACT

This document contains eleven essays by fellows in the Mid-Career Fellowship Program at Princeton University (New Jersey). The essays in this document were published in June of 2000. The following articles and their respective authors are contained in this document: "Do You Hear What I Hear? Or Teaching Music Listening Skills in Music Appreciation Classes," by Roger Briscoe; "Assessment and Evaluation Issues in Technology Planning at the Community College," by John M. Cohn; "Bridging the Gap Between Traditional Fine Arts and Computer Generated Art," by Diana S. Grimes; "Distance Learning in Higher Education: Road to Ruin or Soul of the New University," by Susan Khodabakhshi; "The Changing Aspects of Photography: An Educator's Notes," by Geanna Merola; "The Use of Case Studies in the Microbiology Laboratory Experience," by Jeanie S. Payne; "Faculty Rage: When Professors Go Postal," by Robin Schore; "The Continuing Crisis in Remedial Mathematics," by Kathy Shay; "The Quest for Early Childhood Literacy," by Susan Stock, "Ending Basic Skills as We Know It," by Ron Topham; and "The Interview as a Teaching/Learning Exercise," by Carroll L. Wilson. (VWC)

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Fellows' Essays
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ISSUES OF EDUCATION AT COMMUNITY COLLEGES

ESSAYS BY FELLOWS
IN THE
MID-CAREER FELLOWSHIP PROGRAM
AT PRINCETON UNIVERSITY

JUNE 2000

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Princeton University Mid-Career Fellowship Program

Do You Hear What I Hear?

Or

Teaching Music Listening Skills in Music Appreciation Classes

Roger Briscoe

May 2000

Do You Hear What I Hear?

Or

Teaching Music Listening Skills in Music Appreciation Classes

In a world where music is a part of all our religious, patriotic, social, political, and sports activities, even our private personal moments, it would be hard to imagine life without music. If music is such a ubiquitous presence in our lives, one could ask whether we really listen to all this music? It would seem that most of the time we do not pay that much attention to it. That leads to several questions about listening to music: Do we all listen to music in the same way? The answer to that is surely no. Most likely, the truth is that individually we not only listen differently from each other but we also listen in differing ways depending on the context of that listening. Do we all have the same preferences for the music we listen to? Because musical taste is as varied as humanity itself, obviously not. While it is true that sometimes we have no choice in the music we "hear," when we can choose what we listen to are we open to listening to styles of music other than our personal preferences? There are many styles to choose from: classical music from 1,000 years of history, popular music in many substyles, rock and roll, country, soul, rhythm and blues, jazz, religious music, and the many differing styles of ethnic music from around the non-Western world. For most of us, we prefer to listen to the music we "know" or "appreciate" and for the most part we naturally shy away from that which is unfamiliar to us.

Colleges and universities seem to believe that the well-educated student should understand and "appreciate" a wide variety of music, not just the popular music of his or her generation. In order to do that, college and university music departments offer general education courses for non-music majors with titles such as Music Appreciation, Introduction to Music, or Introduction to Music Literature. The content of such courses customarily includes two broad areas: a survey of musical selections from the various historical periods (in recent years increasingly adding emphasis on non-Western music, now called "World" music) and instruction in musical fundamentals—the elements of music, their nomenclature, and to a greater or lesser extent, *how to listen to music*.

The human being's capacity for hearing music may be used in many ways. We can *passively* **hear** sounds and music (sometimes subconsciously), we can more *actively* **listen** to aural sensory input, or we may *concentrate* on music in a way that is actually **attending** to the incoming sounds (bringing to bear various thought processes). Listening intently and *objectively* to music is a skill (some would say it is an art) which can be learned in a process that develops throughout

a person's lifetime. On the other hand, listening may be an activity which is customarily done on such a purely emotional (*subjective*) level that the listening habits and preferences fixed in our childhood may be broadened and changed only with great effort—a challenging project for both listener and instructor.

In American higher education it is believed that "music appreciation" can and should be taught. This is confirmed by the publication of at least thirty different music appreciation textbooks over the past twenty-five years. There are a dozen or more additional textbooks, quite similar in rationale and layout, for courses in jazz or rock and roll or popular music history. Many of the texts have been sufficiently successful to warrant revised versions and a few have been so effective—and commercially profitable—that they have had seven or more editions (see Appendix B). There is remarkable agreement among the texts in their selection of examples covered in the surveys of the historical literature, including more and more coverage of women composers, American music (especially jazz and musical theater, less so popular music), and World music. The essential vocabulary required for informed listening and discussion of music is highly standardized. There is, however, widespread dissimilarity among the various discussions of *how* to listen.

This study will examine the nature of listening, defining active versus passive listening, and discussing the differences between a musician's listening skills and those of the non-musician. Possible methods will be suggested as to how the highly individualized skill of active listening may be taught. One objective of this work has been to survey the ideas about music listening offered by the large body of available textbooks (a task which this writer has not been done before in a thorough or systematic manner). A synthesis of these various approaches, combined with personal experience gained from 35 years of teaching this subject, will lead, it is hoped, to an enhanced ability to carry out the important mission of "turning students on" to listening to a broad spectrum of music (including classical, of course).

The nature of listening. All of us, including trained musicians, tend to listen to music on an emotional level. If we have a negative emotional reaction to some music, we often turn it off or tune it out. Thus, learning to listen objectively may require going against that tendency. Sometimes it is necessary to deal with how students feel about an attempt to change what they may perceive to be a natural, well-developed skill. To many students this is "interfering" with one of their most sacred and pleasurable activities—listening to the music they "know" and therefore "like." Listening in depth to music that students do not "know"—music that they might quickly describe as music they do not "like"—can often be a difficult activity. There must be a thought-

ful plan to overcome this sometimes subconscious resistance, to reassure students that learning to listen objectively and analytically can be rewarding and can bring even more pleasure to listening to all types of music. Resolving this dilemma is a major objective of music appreciation courses.

In our modern industrial society, one must go a long ways to escape the pervasive sounds of urban and suburban life. We are rarely given the peace of silence, sometimes not even in sleep. At home, TVs, radios, stereos, telephones, computers, and any number of noisy appliances serenade us inside, and vehicular traffic, landscapers, airplanes, kids playing, construction, and other noises bombard us outside. At school or work, another set of sounds is always present, as it is wherever we shop or eat-out or whenever we sit in a dentist's chair, ride in an elevator, or travel. Whether getting about by car, train, or plane, ever-present radios and cassette or CD players accompany us. Even when we walk or jog many of us carry along our portable music makers. Most of us are so used to these constant aural stimuli that we often insure the presence of sound rather than enjoy a moment's respite. Perhaps we have grown dependent on them for our sense of well being.

During most of this—music of some kind or other sounds—we are usually primarily engaged in some activity other than actually listening. The sounds are the "accompaniment" to our lives much in the way a film score runs in the background. Most non-musical sounds we tolerate at a low level of consciousness or we simply tune them out, which is our way of ignoring them. Most of us seem to tolerate innocuous music at half-heard levels as well. In these cases we could not carefully listen anyway, so we seem to take comfort from its presence and pay it little attention.

We are conditioned at an early age to react in this way to the background music of our lives. Many of us also learn in early adolescence to listen constantly to the popular music of our generation, but the type of listening we do in this case is superficial. We may be aware that the music "has a beat," although as long as it is there we do not pay much attention to it, unless we are dancing, in which case we want it to be so regular and repetitious that we can "feel" it without spending too much mental energy on it. What we mostly "attend" to in popular music is a tune's lyrics. The words are meaningful in a direct non-musical way and when we are teenagers, we respond to peer pressure to "know" all the words to all the songs.

Most young people can recite the lyrics of their favorite "hits" and can "sing" along with a recording but without the recording they usually cannot sing the melodies of the tunes (if indeed there is any melody present—there usually is not in Rap music). The type of listening we learn to apply to most popular music will not suffice for listening to "classical" music (or call it "art"

music or "serious" music, the labels are inadequate although mostly understood). At least we can say that this passive listening will not bring with it the many rewards of listening on a deeper level, especially the enjoyment resulting from an ever-increasing understanding of the music. Joseph Kerman, the author of the text used in this writer's classes, invites the student to listen repeatedly and carefully:

> The basic activity that leads to the love of music and to its understanding—to what is sometimes called "music appreciation"—is listening to particular pieces of music again and again. . .these discussions are meant to introduce you to the contents of these works and their aesthetic qualities: what goes on in the music, and how it affects us. (Kerman, 1996)

Over a half-century ago, the eminent American composer wrote in his extremely influential book *What to Listen for in Music* (Copland, 1939), "If you want to understand music better, you can do nothing more important than listen to it. Nothing can possibly take the place of listening to music." Just "listening" is probably not enough, however. One of the more useful textbook discussions of the various types of individual listening is found in *Listening to Music* (Zorn 1991) and a smaller volume by the same author, *The Music Listener's Companion* (Zorn, 1995). Zorn lists five levels: (1) the Sensory Level, (2) the Emotional Level, (3) the Contextual Level, (4) the Script Level, and (5) the Aware Level (see Appendix C).

Other textbooks delineate similar categories of listening. Another highly respected author refers to three different modes of listening: (1) listening for the sensuous qualities of music, (2) listening for the expressive powers of music or how it affects us, and (3) listening for the "sheerly musical" qualities of music, or what happens in the music and involving both the intellect and emotions (Hoffer, 2000). In this writer's judgment, making students aware of these different levels is the first step in teaching the skill of listening. Exercises can be developed which will help students to become comfortable with switching back and forth among the various modes and thereby to increase their ability to actively participate in the listening process.

Most music professors would agree that how to achieve the "aware" or sheerly music level is what must be taught in our music appreciation courses. But is that level of skill necessary for the non-musician? Kerman and other say not:

> The kind of hands-on knowledge of music that is necessary for a music professional—for a composer or performer—is of no special use to you as a nonprofessional listener. But an acquaintance with music concepts and musical terms *can* be useful, by helping you grasp more clearly what you already hear in music.

> Analyzing things, pinpointing things, even simply using the right names for things all make us more actively aware of them. Sometimes, too, this process of analysis, pinpointing, and naming can actually assist listening. We become more alert, as it were, to aspects of music when they have been pointed out. And sharper awareness contributes to greater appreciation of music, and of the other arts as well. (Kerman, 2000)

The trained musician needs music listening skills for music reading, performing as a soloist and as a member of small or large ensembles, analyzing music for study or performance, and composing. The non-musician can learn to listen to music for its melodies, its harmonies, its tempo and meter, its predominant rhythmic quality, its instrumentation (or other performing medium), its texture (the relationship of its various musical lines or voices), and on the highest level of aural analysis to listen for a musical work's formal structures.

Teaching listening skills. How can these listening skills be achieved? Hoffer advocates listening to as much music in as many style as possible, concentrating completely on the music (he warns against "taking a sound bath or nodding off"), learning as much historical and musical information as possible about the music, and delaying judgment on the music until after it has been heard enough times that it is "familiar" (maybe even listening until one "likes" it). (Hoffer, 2000) This writer's experience has confirmed that there is an enormous gap between the listening skills of anyone who has studied an instrument (especially the piano) and the untrained ear. For that reason, an instructor must proceed very slowly with the process of teaching listening skills. Every element of music must be isolated and listening exercises must be carefully designed to insure that students learn to pick out each element.

Before beginning the process of working through the various musical elements, an exercise to "break the ice" is appropriate. An introductory technique advocated by several authors is to play excerpts from three widely varied styles and ask the students to write about the *mood* each piece creates and how each *differs* from the others. Examples could be as dissimilar as a piece of World music (Chinese, Japanese, African, or native American), a work from the Baroque or Classical period (such as Bach or Mozart), and a radical, probably quite dissonant composition from the 20th century (even though it is 87 years old now, Stravinsky's *The Rite of Spring* still shocks most listeners who are unfamiliar with it). This then leads to a discussion about the two areas: the *effect* or the mood of a piece and the *means* or the way musical elements are used. In order to discuss these items, the students easily comprehend the need for a specific vocabulary to use when describing music. Concentrating on these two simple concepts can be done throughout the course to focus the listening activity.

Listening Exercises. Craig Wright's 3rd edition of *Listening to Music* (Wadsworth, 2000) has included 40 Listening Exercises which break down the musical elements into simple concepts. These are presented on an introductory CD that is packaged with the text or included in the 2-CD set that also comes with the book. Each example is short (usually 30 seconds to a minute or two) and asks students to answer three to five multiple choice questions printed in the text. An outstanding listening exercise is titled "Building the Symphony," which presents excerpts from Beethoven's *Eroica Symphony*. The recording takes a section of the last movement and breaks it down into its individual instruments or its groups of instruments in order to illustrate what the components of the large orchestra sound like. When the instruments play in isolation or in groups this serves to reinforce the characteristic tone quality and range of each instrument. The first eight listening exercises apply to the introductory chapters on the elements of music. The other 32 exercises are spread throughout chapters covering the various style periods. One or two of the important selections studied in each chapter has an additional exercise to lead the listener through the music step by step. These listening examples are effective tools for teaching how to listen by directing attention to important musical features.

Specific techniques for listening to the elements of music. The discussion below will enumerate techniques and examples taken from various authors, along with some proven effective by the writer's personal experience. Following the type of introductory exercise suggested above, this author begins with a comprehensive definition of music: "MUSIC is organized SOUND events moving through TIME to points of arrival." This statement is shown to cover all types of music and demonstrates how music is unlike the visual arts in that it occurs in TIME.

Then, before beginning a discussion of the elements of music (rhythm, melody and pitch, harmony, timbre and the instruments, texture, and form) it is helpful to present the **four parameters of a musical sound** (i.e., the four scientifically measurable facets of a single sound):

- Pitch — the frequency of the sound wave measured in Hertz (cycles per second). Here a demonstration of the overtone series is presented by striking the appropriate keys on the piano. Sympathetic vibration is demonstrated.
- Intensity — the amplitude of a sound wave that determines the loudness/softness of a note.
- Duration — the time length of the sound; this parameter is quite complex, as it covers rhythm in all its facets. The concepts of beat, meter, tempo, and syncopation are all part of duration. It is pointed out that musicians rarely use real time in musical composition or

performance. Rhythms, whether notated or improvised, are relative and center on a regular or irregular beat or pulse.

- Timbre or musical color — the overtones in the sound wave that determine the unique qualities of each instrument or voice. It can be demonstrated that there is an audible difference when the same pitch is produced by the piano, a voice, or an instrument.

Of these four parameters, musicians are comparatively specific (although not at all absolute) only about pitch and duration. When, in the miracle of creative imagination that occurred about 1000 AD, the musical staff was invented, these two aspects of music were represented in the two dimensional planes: pitch utilizes the vertical plane, time is represented by the horizontal plane moving from left to right. This invention took place in the West (and in no other culture in the world) and specifically in the Roman Catholic church. Thus, the use of the left to right reading convention of Western written language is not surprising (not in the Chinese or Hebrew manner).

Rhythm. Beat, tempo, meter, syncopation, rhythmic notation. Simple folk songs and nursery rhyme tunes as well as patriotic songs—those familiar to almost every student—make the best examples for introducing rhythmic concepts. Any recorded or performed example (for example by the instructor at a piano and singing) can show what a beat or pulse is. One must caution that sometimes perception of the beat will vary from person to person, depending on mood and other factors; only in conjunction with the written notation for a particular piece can the "official" beat be determined. For instance, "Yankee Doodle" or any march can demonstrate duple meter while "My country 'tis of thee" clearly shows triple meter. Conducting patterns can be used to reinforce the various meters. Syncopation can be a difficult concept to explain until its connection with popular music and jazz is established. Then it is easier to point out instances of syncopation in classical music. It is helpful for students to learn the basics of rhythmic notation, although how meter signatures work can be complicated. As in all aspects of the musical "puzzle," the more pieces of the big picture one learns the better one can understand it. The more an instructor can encourage students to participate aurally and physically in tapping and speaking rhythms the more quickly and easily they will be understood.

Pitch and melody. Octave, notation, scales (chromatic, major, minor). Using examples from any textbook, and playing them on the piano, the sound of the octave, the major and minor scales, the church modes, the chromatic scale (perhaps also the wholetone and pentatonic scales) are demonstrated. The basics of pitch notation, including the use of the "accidentals" sharps, flats, and natural signs, are emphasized. When the ingredients are understood, melody is the next step. "A melody is a cohesive series of pitches and rhythms." A wide variety of simple tunes and

melodies—eventually familiar popular or standard songs can be introduced—are used to show how tunes and melodies are organized into phrases and other small units. Longer themes and melodies that will be parts of longer musical works can be used as well. Hymns, patriotic songs, even Beethoven's "Ode to Joy" can be used to show melodic structure.

Harmony. Intervals, triads, consonance and dissonance, keys, chord progressions, accompaniment. Melodies are made from pitches occurring *consecutively* and harmony is the result of pitches sounding *simultaneously*. Harmony is among the most difficult aspects of music for the non-musician (and also for many musicians!) to understand and to hear. Most people can grasp what an interval is (the distance between two pitches) and that they can occur melodically or harmonically. It is relatively easy to get across what a triad is (the simplest chord of three pitches a third apart sounding simultaneously) and that there are many different kinds of chords. It is a difficult next step to explain how chords proceed in a systematic (or not so systematically) way that is called a chord progression. Hearing this phenomenon is another matter so tiny steps are necessary. Simple blues progressions can be followed and basic cadence formulas can be recognized. Even consonance and dissonance (which historically are relative concepts) can be exaggerated and understood out of context. To be able to hear more than this takes both time and experience. One may have to be satisfied that the lifelong process of learning to hear harmonic distinctions has begun.

Musical Color and Dynamics. Timbre, Italian terms for loudness/softness (*piano* and *forte*, etc.), instruments (building a symphony). In this section on tone color or tone quality, are introduced the various performing media of music: voices and all the instruments. Effective works which demonstrate various instruments of the orchestra are Benjamin Britten's *A Young Person's Guide to the Orchestra* (so titled when the composer's narrative is spoken, or *Variations and a Theme by Purcell* without the narration), Prokofiev's *Peter and the Wolf*, and Ravel's *Bolero*. The Wright book includes the Britten composition on its CD. It is helpful to provide quite detailed charts that give the sequence of instruments in each piece.

Texture. Monophonic, Polyphonic, Homophonic. Gregorian Chant is the single most important example of monophonic texture, although anyone singing a song *unaccompanied* is monophonic texture. The differences between polyphonic and homophonic texture, while relatively easy to demonstrate with a variety of examples, are most thoroughly grasped after much of the course has been completed and a wide selection of music has been studied. One can learn that certain historical style periods favored particular textures, and with practice one can learn to recognize when a composer changes texture for variety.

Form. Repetition and contrast, variation technique, strophic, binary, ternary, rondo, and sonata forms. An important aesthetic principal is that a good work of art (visual as well as performing) will strike a balance between unity and variety. Here, too, is the place for the form vs. content question. A standard popular song makes a great vehicle to demonstrate the "four structural operations": statement, repetition, contrast, and restatement (A A' B A''), with variation being somewhere on the continuum between repetition and contrast. Many short compositions can be used to demonstrate the short forms, such as Brahms's "Lullaby" (strophic form), a Baroque or Classical minuet (binary form), a Romantic piano character piece (ternary form), the theme from PBS's "Masterpiece Theatre" (a rondo), and so on. Longer forms such as theme and variations (the Britten mentioned above is a great example as is Mozart's "Twinkle Twinkle Little Star" Variations) and the sonata form will be represented by many examples during the course. The incomparable example of a sonata form is of course the first movement of Beethoven's Fifth Symphony (see Appendix A).

Musical Styles. The style periods: Medieval, Renaissance, Baroque, Classical, Romantic, 20th century. After spending as much of a third of the course mastering the fundamental elements of music, and their specific nomenclature/vocabulary, most textbooks proceed with a survey of the literature in chronological order through the various style periods. Some, however, organize the survey around genres, such as vocal music, chamber music, solo keyboard music, orchestral music (concerto, symphony, etc.), dramatic music (opera, musical theatre), program music, and other categories. By this point the students have begun to listen in an aware manner and are ready to study longer musical works.

Listening Exercises and Listening Guides. Most of the music appreciation textbooks come packaged with a set of compact discs (formerly with cassette recordings) covering a basic repertoire for the survey of music literature from each historical style periods to be studied during a course. Almost all the textbooks now take advantage of digital technology and offer Listening Guides (or Listening Charts) for each selection. These are keyed to the real time counters found on most CD players (stop watches are an effective substitute). The guides list the minutes and seconds of elapsed time when various structural or musical events occur during the recordings. Repeated listenings to each musical work serve to reinforce the highlights of each piece and the timings leave no doubt when a certain event occurs or what it sounds like. An example of such a Guide or Chart is given at Appendix A, Listening Chart 14 in Kerman's *Listen* (3rd Brief Edition) for the first movement of Beethoven's *Symphony No. 5 in C minor*. The four parts of the sonata form are shown (Exposition, Development, Recapitulation, and Coda), and with a rudimentary

knowledge of pitch and rhythmic notation the main thematic ideas can be followed. Experience has shown that once students learn how to follow such charts, they find them helpful and instructive.

If one has proceeded slowly and simply, in a systematic and organized manner, most students complete a music appreciation course having done a fair to excellent job of learning a representative core of music literature and of having begun the long process of *learning to listen* actively and objectively, becoming more and more aware of what goes on in a piece of music and how those musical elements combine to create an expressive effect on the listener. It is hoped that the outcome will be increased understanding and enjoyment (appreciation) of a wide variety of music. When this occurs, the individual will reap the rewards and pleasures of music for a lifetime. What a privilege—and a joy and challenge—it is to be the guide for the start of this journey to listening with all one's heart and soul, and especially one's head.

Appendix A

LISTENING CHART 14

Beethoven, Symphony No. 5 in C Minor, first movement

Sonata form. 7 min., 8 sec.

EXPOSITION

0:02	**Theme 1**	Main theme with two fermatas, followed by the *first continuation* (based on ♩♩♩𝅗𝅥); another fermata (the third)	
0:20		Main motive (♩♩♩𝅗𝅥), *ff*, is followed by a *second continuation*; timpani, crescendo.	
20 26 0:42	**Bridge theme**	French horn, *f*	FRENCH HORN
Second Group			
0:45	**Theme 2**	Major mode, *p*, strings and woodwinds (♩♩♩𝅗𝅥 in background)	
21 27 1:13	**Cadence theme**	Based on ♩♩♩𝅗𝅥 motive	
1:21		CADENCE	
1:22	*Exposition repeated*		

DEVELOPMENT

22 28 2:45		First modulation, using ♩♩♩𝅗𝅥 motive; French horns, *ff*; minor mode	
2:50		Development of *first continuation* of theme 1	
3:15		Climactic passage of powerful reiterations: ♩♩♩ ♩♩♩𝅗𝅥 ♩♩♩𝅗𝅥 𝅗𝅥	
3:19		Development of bridge theme	
23 29 3:29		Fragmentation of bridge theme to two notes, alternating between strings and winds	
3:38		Fragmentation of bridge theme to one note, alternating between strings and winds, *p*	
3:57	**Retransition**	Based on ♩♩♩𝅗𝅥 , *ff*, runs directly into the recapitulation.	

RECAPITULATION

24 30 4:02	**Theme 1**	Harmonized, two fermatas. *First continuation* of theme; woodwind background	Adagio
		Slow oboe cadenza in place of the third fermata	
4:35		*Second continuation* of theme 1	
4:55	**Bridge theme**	Bassoons, *f*	
Second Group			
25 31 4:58	**Theme 2**	Strings and winds, *p* (♩♩♩𝅗𝅥 in timpani); major mode	
5:31	**Cadence theme**	This time it does not stop.	

CODA

26 32 5:38		Another climax of reiterations (as in the development)
5:52		New expanded version of bridge theme, in counterpoint with new scale figure; minor mode
6:07		New marchlike theme, brass; winds and strings build up.
27 33 6:39		Theme 1: climactic presentation in brass. Last fermata
6:47		*First continuation* of theme 1, with a pathetic coloration: oboe and bassoon figures
6:52		Strong conclusion on ♩♩♩𝅗𝅥

Listening Chart, Beethoven: Symphony No. 5, first movement, from Jos. Kerman: *Listen* (3rd Brief Edit.)

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Appendix C

THE FIVE LEVELS OF MUSIC LISTENING

(from Jay D. Zorn, *Listening to Music*, Prentice Hall, 1991, and *The Music Listener's Companion*, Prentice Hall,1995)

(1) The Sensory Level. Some listeners prefer letting the music wash over them without giving it much thought. This passive rather than active listening can be relaxing—like basking on a beach on a sunny day with the surf rushing back and forth over you. Since the *sensory level* is effortless and soothing, you can allow your brain to idle in neutral and your spine to tingle.

(2) The Emotional Level. Music can speak directly to our emotions. If you've ever listened to music and found yourself daydreaming or reminiscing, you were listening at an *emotional level*. There in your private world, that beautiful melody by Chopin stirs your deepest feelings—the ones that rarely rise to the surface, the feelings we seldom verbalize.

(3) The Contextual Level. Some music supplies a background for a familiar event, activity, or environment. When we hear it, we immediately associate it with some context—a football game, a circus, graduation. Even patriotic music falls into this category. In *contextual* listening, the association may become more important than the music itself.

(4) The Script Level. Most music has no specific story for you to follow—although opera, ballet, and film music certainly do. But if you find yourself making up a story or unraveling a plot, you may be listening to music at the *script level*.

(5) The Aware Level. Great music has layers of subtleties that invite your involvement. Here, at the *aware level*, the excitement begins. You may still enjoy the sensory, emotional, and script levels, but as you grow more aware, the music engages your heightened understanding, and you are able to enjoy it for its own sake.

ASSESSMENT AND EVALUATION ISSUES IN TECHNOLOGY PLANNING AT THE COMMUNITY COLLEGE

Dr. John M. Cohn

County College of Morris

Princeton University Mid-Career Fellowship Program

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INTRODUCTION

The most recent *Campus Computing Project* survey confirms what we know experientially about the growing use of electronic technology on our campuses. More than two-thirds (69.5 %) of the institutions in the 1999 survey provide online undergraduate applications on their Web sites, while three-fourths (77.3%) make the course catalog available online. Similarly, almost half of the institutions surveyed (46.5 %) report that they currently offer one or more full college courses online via the Web, while the percentage of college courses using Web resources in the syllabus rose from 10.9 in 1995 to 38.9 percent in 1999.

As newer, more sophisticated technologies are incorporated into higher education, there appears to be concomitant erosion of confidence in our colleges and universities among the general public. As Taylor and Eustis suggest, this "disconnection" manifests itself in questions about the quality and relevance of undergraduate education and in demands from governing

boards and funding agencies for more accountability and productivity. In turn, defenders of higher education point to the adoption of information technologies as a means for enhancing the academic environment and meeting the needs of our students.

The question is how are we to know whether or not information technologies are having a transforming impact on the instructional process? How are we to create a sense of validation and assessment for the use of technology in teaching and learning? Can the rapid introduction of new instructional technologies be reconciled with calls for assessing instructional outcomes? These are complex questions. The present paper will focus on some ideas related to these issues and hopefully generate practical suggestions for incorporating assessment methodologies into the evaluation of teaching and learning, both within and outside the classroom.

THE PLANNING ENVIRONMENT FOR ASSESSMENT

The overall context for assessment should be the institution's technology plan. Data from the aforementioned 1999 *Campus Computing* survey shows that fully three-fifths of all institutions (61.3 %) have a strategic plan for information technology, a substantial gain from the 50 percent reporting such plans in 1998. Therefore, the basis for evaluation and assessment is how the institutional plan for technology has changed the institution, specifically, how funded initiatives have had an impact on instruction. As expressed by Richard N. Katz: "*(T)he ability of traditional institutions...to respond to public calls for accountability, and to realize the potential gains associated with eliminating the barriers of space and time, will depend in part on their success in communicating the contributions (information technology) has made to their programs.*"

Regrettably, although many institutions have technology plans, most do not appear to follow through and evaluate whether these plans have been carried out and the extent to which they have had any impact on the institution and the educational process. One exception is the technology plan adopted by Kansas City Kansas Community College.

In its plan, KCKCC sets forth a "rationale" that the institution's telecommunications infrastructure serves to enable "*the utilization of appropriate instructional methods.*" Technology as an appropriate instructional tool is based on the premise that technology is associated with increasing and/or influencing the following:

- The ability of students to problem-solve;
- The ability of instructors to teach complex subject matter;
- Instructor satisfaction, involvement, and currency in instructional practice;
- Student satisfaction with the educational process; and
- A community perception of quality education.

The purpose of evaluating the Technology Plan is to develop "*an on-going model for technology use, both in and out of the classroom, and to improve technology implementation and use throughout the campus and the community.*" The College views the evaluation as "*a continuous process for effective decision making (that puts) students, teachers and community partners at the heart of assessment.*" Among other expectations, the College perceives its evaluation process as helping to:

- Assess the change in knowledge and attitudes of the students and instructors at the College, and,

- Assess the development of a model for using technology in the classroom.

By linking assessment to strengthening the application of technology as well as its potential for improving teaching and learning, the KCKCC plan establishes an overall conceptual base that can serve as the context for the discussion that follows.

WHAT WE NEED TO KNOW

In her study of issues to be considered when assessing technology implementation, Vicki L. Cohen has posed a number of questions that can guide the assessment process in educational settings. These interrelated questions, and the responses to them, generate date and can form the basis upon which assessment may occur and future decisions made.

The questions are as follows:

- *What is the degree to which technology is being used*? This question refers to how integral technology is in the classroom environment. Do students have frequent access to computers or is there one computer on site that is used only sporadically, as a supplement to instruction?

- *What is the impact of technology on the teaching/learning curriculum*? How does technology impact what is being taught and how it is being taught? Is technology integrated into the curriculum in such a manner that subject matter is being taught in new and different ways?

- *How is the computer being used within the curriculum and within the institution?* The essential distinction here is whether or not students use the computer as a cognitive tool, as a "literacy" tool applied to problem-solving processes and higher-order reasoning strategies. The implication is that using technology in this way has a direct and positive impact upon student achievement.

- *How does technology affect how students learn*? Multimedia technology is changing how information is "packaged," delivered, and processed by the end-user. How are the new multimedia tools promoting the process of creative problem solving by students?

- *How does technology affect a student's learning style?* To what extent does exposure to specific instructional technologies affect such things as student motivation to succeed, persistence in completing assignments, and willingness to work collaboratively or in teams?

- *What are the unintended effects of technology implementation?* This refers to both positive and negative outcomes. For example, how does interactive multimedia or the disordered nature of the Internet affect learning? Are students able to learn structured, logical ways to search and access information, using technology?

- *Finally, what facilitates/impedes technology implementation?* This refers to the availability or lack of resources for infusing technology into the curriculum, providing sufficient student training in the use of technology, and creating staff development initiatives that support technology use among the faculty.

In summary, what we need to know about the impact of technology on instruction includes:

- The degree to which technology is used in the classroom;
- How technology is integrated into the curriculum;
- How the computer is used as a tool for learning;
- The impact of technology on student learning and learning styles;
- The unintended effects of technology; and
- The degree resources are available for infusing technology into the curriculum.

METHODS FOR ASSESSMENT AND EVALUATION

Assessment and evaluation in this context entails gathering information systematically about the use and impact of technology in the instructional process, then drawing conclusions that can guide future planning and implementation. Some assessment techniques are geared towards measuring the *perceptions* of faculty and students towards technology and its use. Other techniques attempt to measure what students know, how they perform, then seek to make judgments about how technology has affected performance in relationship to learning outcomes.

Assessment can begin with very basic methods for ascertaining the impact of technology on instruction by gauging the attitudes of students and faculty. For example, at a faculty convocation, and in classrooms in the Dallas County Community College District, students and faculty were surveyed concerning their *attitudes* toward the use of interactive videodisc technology. The results of the survey concentrated on three areas:

- Faculty perceptions of videodisc technology;
- The level of student interest in different instructional strategies-- i.e., in different formats of instruction-- in two history classes; and,
- Reaction to a videodisc presentation in humanities/art classes.

Both students and faculty who had observed the use of this technology were impressed with it and indicated their preference for it over the more traditional use of slides. (Olson, *et. al.*, 1995.)

In this study, the focus was on gauging perceptions regarding the use of one particular technology in classroom settings. A different approach to assessing impacts, described below, focuses less on perceptions of a specific instructional technology, and more on a multifaceted evaluation of *changing* perceptions generated by the availability of one or more new technologies.

At County College of Morris, a technology plan developed in 1997 guided three years of unprecedented growth in technology-based instructional and instructional-support applications on campus. A second plan has been written to take the college through 2003. The accelerated infusion of technology between 1997 and the present has prompted efforts to identify perceptions of what has been accomplished. The College's Information Technology Committee, an advisory body to the President, developed surveys for distribution throughout the campus.[1]

Students and faculty were both asked to rate their general computer skills, their interest in using technology, and their levels of experience with Windows-based or Macintosh computers

[1] The leading participants in this process were the Committee chairperson, Professor Rita Alisauskas, Coordinator of the Medical Laboratory Technology program, and Professor Joan Cook, Professor of Psychology, County College of Morris.

three years ago and today. Additionally, students were asked to:

- Rate the use of different technologies they have experienced in the classroom or for assignments, both in high school and at CCM;
- Identify the kinds of technologies they would like their instructors to use in the classroom;
- Indicate their interest in seeing how an online or interactive TV course works; and
- Identify where on campus they would prefer to have computers available for student use.

Faculty members were asked to:

- Rate their level of awareness of the possible uses of technology in their disciplines, three years ago and today;
- Explain why they did not use certain identified technologies. Reasons offered for check-off included:

  Resources not available;

  Not enough time;

  Need training;

  Not interested;

  Not appropriate for discipline;
- Rate different types of instruction (e.g., classes, workshops, tutorials, one-on-one help) attended or used and indicate how helpful each had been in supporting their use of instructional technology;
- Identify items they would like to have available for classroom instruction; and,

- Indicate their interest in observing a colleague using technology in the classroom or seeing how an online or interactive TV course works.

All technologies mentioned were defined in a glossary, many with small accompanying illustrations, to serve as a guide for the respondents.

The more comprehensive approach to assessing technology in the classroom hopes to link technology use with learning outcomes. This approach is spelled out in the Kansas City Kansas Community College technology plan, cited earlier. Here, in addition to satisfaction measures, evaluation includes instructors making judgments *about student performance in relation to prescribed learning outcomes*. Performance is evaluated from information collected through assessment activities, such as observation, tests, projects, reports or student portfolios, that are appropriate to given assignments. The expectation is that the "(u)se of appropriate technology will increase constituent perceptions of educational effectiveness as well as the educational performance of students."

TECHNOLOGY IN CONTEXT: SOME CAVEATS

Although the assessment and evaluation of technology and its appropriate use in instruction are an increasingly important facet of instruction and learning, we must remember that technology, by definition, refers to applying a tool or set of tools to the accomplishment of a task. Thus, when we attempt to draw conclusions about the effectiveness, perceived or otherwise, of a technological application, we must remain aware that:

- There are often accompanying contextual reasons that will determine or have an impact upon whether or not technology is implemented successfully, and,
- The effective manipulating of technology should not be confused with mastering academic, non-computer-specific competencies.

Stephen C. Ehrmann offers an example of the first point. Institution "A" initiates the use of an electronic mail system to enhance instruction by promoting greater student collaboration. During the course of an evaluation process, Institution A discovers that Institution "B" uses a different electronic mail system and achieves better outcomes. Institution A concludes that it should replace its e-mail system with that used by Institution B. However, if Institution B has a history of student collaboration and using teams to do assignments, etc., then it is likely that *any* e-mail system would enhance instruction that much more. In such a scenario, the effectiveness of the technology *per se* is a function of other variables.

An illustration of the second point is the relationship between information *technology* and information *literacy*. The Association of College and Research Libraries defines information literacy as the ability to recognize when information is needed and then be able to locate, evaluate, and use the needed information effectively. The ACRL argues that information literacy may be accomplished or enhanced in part by fluency with information technologies. But literacy itself, characterized by strong investigative and critical thinking skills, is ultimately independent of the technologies it uses.

All of this is not to suggest that technology cannot in and of itself have an identifiable impact on instruction and learning. Rather, to undertake assessment appropriately, we must remain cognizant of the non-technological factors that can promote or impede the effective

deployment of technology, as well as of the skills that are mastered independently of technology. As Ehrmann suggests, "one important function for evaluation is to diagnose, in advance, the non-technological factors that will affect the use of imminent investments in technology."

SUMMARY AND CONCLUSIONS

This paper represents an attempt to identify assessment and evaluation issues that arise from the planning and implementation of technology. The focus has been on technology as it pertains to instruction and learning, both within and outside of the classroom. Computer technology is everywhere on college campuses today, and planning for technology implementation is becoming more widespread. However, there is relatively little concrete discussion of assessment and evaluation in the context of the kind of technological change we are experiencing.

In this paper, there has been an attempt made to create a tentative framework for future work in this area. This has included:

- Establishing a conceptual rationale using the example of one college's inclusion of assessment and evaluation as an important component of its technology plan;
- Outlining a number of questions for guiding an assessment of technology's use in the educational environment;
- Illustrating some methods for assessment and evaluation, including surveying student and faculty attitudes as well as linking technology assessment with pre-defined

learning outcomes; and,

- Offering some caveats to drawing conclusions about technology's impact, given non-technological factors that must be entered into the assessment equation.

It is this author's sense that assessment and evaluation must be established within the context of an institution's technology plan, and must proceed in coordination with other campus initiatives. The most important of these initiatives is "outcomes" assessment, through which student performance is measured against articulated instructional goals and objectives. In this fashion, technologies-- the "tools" of instruction-- are never far removed from the *purposes* of instruction and from other measures of success in teaching and learning.

Finally, any analysis and assessment of technology's impact must, at some level, take into account the broader institutional issues involved with the implementation of technology. We have focused on teaching and learning. In her article, Joan K. Lippincott considers assessment from the perspective of campus networks and networked information, in which teaching and learning represents one dimension of several that characterize the "networked environment." At still another level, some institutions view technology as having a transforming impact. Kathryn J. Neff describes how technology is perceived as the catalyst for "re-inventing" a community college in Ohio. Assessment has many facets. These must all be considered when considering how technology is changing the instructional process in higher education.

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Bridging the Gap Between Traditional Fine Arts and Computer Generated Art

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"'New materials of art have always given rise to new forms of art and the discovery of those new means has been stimulated by expressive needs – whose numerous determining factors have always been the despair of the artistic criticism"

Vinichio Paladini, 1929 (Jones 14)

Part One

Computer as a medium for artistic expression

A turning point has been reached where it is time to consider the computer as a new media for the creation of fine art. As Michael Rush expressed it, "The sometimes uneasy alliance between art and technology has come of age: the inexorable march of the world towards a digital or computerized culture has included art in its step" (168).

In keeping with this technological march, artists and art educators need to understand the history of the digital image and how it has evolved from its emergence. They must understand the latest applications so that they can develop strategies for implementing computer technology into their fine arts curriculum.

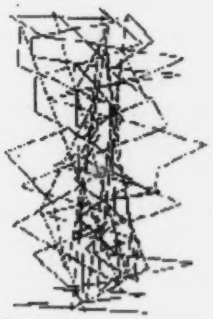
In this paper I would like to bridge the gap between traditional fine art and computer generated art. I will present an overview of the history of digital images, current fine artist who utilize the computer as an artistic media or tool, as well as oppositional views. I have also developed an outline of strategies for art educators to adapt in a fine arts program. Within this outline, I will present digital images that I have created as an artist.

The evolution of computer generated images.

The roots of digital art emerged within the military defense system. The world's first computer, the ENIAC, was invented at the University of Pennsylvania with funding provided by the U.S. Department of Defense (Rush 171). It was designed to be a numbers cruncher for defense systems. As computers improved so has their ability to handle other functions and eventually their ability to handle graphic images. Old computer terminals displayed letters and numbers in a greenish hue with a black background. Processing was done on mainframe computers in

remote locations. These systems were used for data entry and batch processing of information. Eventually some of the more sophisticated systems were able to handle images. However, the early technology for digital imaging was expensive, difficult to use and inaccessible. The advent of the personal computer has brought processing power down to the desktop. Computer programs (Microsoft) were designed for PC's and computer monitors were designed to produce a better grade of definition. The color monitor was first introduced with eight colors. As computer chips were designed to process information at higher speeds and hold much more data, computer programmers were able to offer more user-friendly programs, and the display used greatly enhanced graphics. Software designers recognized the need to offer programs that allowed the user to manipulate images on the screen. This led to programs that allowed "painting" on the computer. These original programs were difficult to learn and were fairly inflexible. Today's programs in contrast do not require one to be a computer expert. The latest software that is being utilized by artist includes Photoshop, Illustrator, and Painter. Because they are accessible and easy to learn, this really bridged the gap that many artists had anticipated.

To understand the present it is important to look at past works of art on the computer. Popper points out how "digital art had its beginning in the early 1960's" (80). Many of the first investigators were scientists who were not interested in art. In the early 1960's Michael Noll, began exhibiting some of the first digital images in an art gallery. He was trained as a researcher for Bell Labs (Rush 172). (example #1)



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Example 1#, Noll, Michael Gaussin - Quadratic (1963)

Early works consisted of geometric shapes done in black and white with simple lines or curves. One of the first computer artists, Lillian Schwartz, began using the computer as an art form in 1969, taking digital images to a new level. Her images incorporated the use of color and additional complexity in her designs. She began experimenting with sculptural pieces made by computers. Lillian Schwartz states, "with each new advancement in computer technology, I have continued to search for different ways to appropriate ideas, compositions and palettes as sources of inspiration to create new visual imagery" (43). She used the computer to appropriate others artist works, such as VanGogh, Duchamp, and Picasso. She scanned the work of these artists into the computer, examined their composition changes and colors, then abstracted their works. The process of examining and separating images gave her a better understanding of the overall structure underlying in their works. She states "Now, with the computer the artist can use a variety of techniques to analyze artworks such as the elimination of the individual color to aid the examination of the composition alone. The uses of the computer with sophisticated software can aid both the analyses of a work of art and the decision making steps in the creative art process" (44). Lillian's work takes the images of these artists and applies the tools of the software program, PhotoShop, to abstract or distort the original work.

The ink-jet printer, which was initially used solely for commercial applications, began to provide more functionality for artist and more opportunities. In the supplemental edition for The Journal of Printing, it is pointed out that "...digital print pioneers such as Graham Nash, John Cone, and David Adamson as well as artists they have worked with who made the fine art development of the digital arts possible. It was Graham Nash's vision, that turned commercial printing equipment such as the Iris printer to fine arts usage and it was Jon Cone who developed some of the first stable inks" (6). Graham Nash bought his first Iris printer in 1988. At this time he collaborated with David Adamson on devising the usage of an Iris printer and creating appropriate software for it to be compatible with an Apple II. Jon Cone was working on the advancement of high resolution, large scanners and developed a set of stable inks and software specifically for fine arts. He combined this technology with different

types of paper to find which produced the best image ("Hands on Paper").

One of the first artists that worked with Cone was the artist David Humphrey, who used the computer as a tool. When working on an image he would bring various papers, pictures, scraps and different ideas for using these materials into his work. He would photocopy pictures and paint on top of the printed image. He also scanned images into the computer and distort them using a painter program. He also smudges the print while it was wet or paint on top of the laser outputs.
Humphrey states "when I got the Mac and began playing with the software I found that it offered a kind of recapitulation of the history of modern art. One of the things it can do very easily is abstraction" ("Hands on Paper"). He would output his image on to a laser printer and create a slide of the image, then project it on a canvas to paint. He would also smudge the print while it was wet or paint on top of the laser outputs.

David Adamson whom is known as a prominent digital printer began working on an Apple II in 1978. Adamson states,"With extreme difficulty --you could draw a stick man and a house" (10). He continued,"I knew the computer would someday be an artistic tool" (10). He began his trial work in 1987 with Iris Graphics. He purchased an Iris printer and funded the enormous cost by selling portfolios of the works of the selected artist he chose for this promotion. The portfolio of prints were titled "Washington Portfolio". He wanted to bring in artist, renowned in their field, that had not yet used this medium. This idea brought great recognition to digital printing. Adamson said " We took the first portfolio to several museums and most curators didn't even want to look at it. All they knew was that it was digital and involves a computer and that was enough" (Sarver 22). He felt that he would have to bypass the museum curatorial system and go directly to the top artist. With artist of repute producing these digital images the galleries quickly changed their minds. Events such as "The Austrian Pavilion at the Biennial in Venice in 1995 which was completely dedicated to media art, can be seen as proof of the development" (Franke 253). The growth of organizations such as the International Association of Fine Art Digital Printmakers contribute greatly to the new interest. His first choice was to work with Chuck Close. Close had been working with large 20 x 24-inch Polaroid prints, which

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could not be made into edition. Adamson went to Close and got permission to work on one of his images using a digital back on a 4x 5 inch view camera, he shot the close-up image and then printed it on the Iris. Close was impressed and wanted several on a 3 x 4-foot scale and several on a 6 x 8-foot scale.

Adamson has also worked with a traditional painter Robert Rauschenberg. He assisted him with a project he did for Pace/MacGill Galleries in N.Y. (Sarver 22). Rauschenberg created fresco, which was made from Iris transfers. A 140 sheets of images were produced from his travels all over the world. He transferred the images into wet plaster. The plaster was set into blocks of 3 x 3-foot sections. The final fresco was sealed with bee's wax. Along with this fresco he also exhibited 15 Iris print images. The show attracted a lot of attention in the New York City art world. Many artists were impressed with the use of the Iris prints and their quality ("Hands on Paper").

Adamson is now currently working with artist Jim Dine, whose traditional media is paint. Some of his digital prints are being made into images for "high couture dresses" for the Paris fashion show" (Sarver 24).

Adamson expresses one of the prime reasons he switched from traditional print to digtial was "that it offered a number of creative advantages for artist...when you work with an anist on a conventional lithograph, you have to basically work backwards from the point of how many colors you want to how many colors you can afford"(26). He continues to say "what makes working with artist in a digital setting so rewarding is the ability to have them bring in objects, ideas, and drawings then scanning and reassembling them without any reduction in color or space and then printing all in the same day. It speeds up the process of creativity a thousand fold" (Sarver 27).

Painter - David Hockney's new works using the computer as a new media.

David Hockey began his interest in exploring the computer in 1990 at a Silicon Valley conference on computers. The notion of drawing on a computer and printing images captured his attention. He began his own investigation using a still video camera. He liked the idea of using no film and the availability to download his images

directly into the computer. He began using this camera to do a series of portraits, combining his paintings as a backdrop for the people. He states "I realized that having a common background set up a kind of gestalt that made a link" (Hockney 207). This led to his decision to purchase a Mac. Hockney wanted to discover what could be done with the medium, such as the types of marks and textures that could be created and the quality of color, along with the crispness of photographic images (Livingstone 251). He felt a sense of freedom given to him in creating on the screen. No mark was irreversible and he could keep the freshness alive without ruining the color. Any mark could be obliterated or replaced. In 1991 he devoted himself to making drawings directly by using the computer and printing them out. Hockney states "I became aware that what the computer was really doing was letting you draw in a printing machine"(211). In his search he raised such issues as "What are these pictures? These are the originals that come out. They are not, in that sense, reproductions". He was excited about what the disk can produce for printers. He could send the disk back and forth to the printer for corrections he would make for adjusting color. He explains how "printers were interested in this new process of working from a disk with digits without a preexisting picture to match "(Hockney 211).

Benefits of using the computer for artist and art students

Using the computer allows for quicker changes, encourages experimentation and speeds up the creativity process. Mel Prueitt a pioneer of computer art points out how this avenue opens up a new horizon for people who felt they could not draw, so they could not be an artist. With the latest easy to use graphics and paint programs more people will feel freer to explore their talents within themselves. He feels "...by creating a blend of reality with unreality our sensibilities will be challenged in new ways...we can easily see how computers can relieve the artist of some of the routine task to allow more time for a higher level of creativity" (Prueitt 5). Prueitt describes using the computer "as an exploration of ideas without really knowing where one is heading ...experimentation and flexibility...taking chances" (5). Artist can save their original image and explore an unlimited amount of possible changes to their image.

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Part Two

The opposition of fine artist to using the computer.

Many artists would like to disregard the mere existence of computers and especially as a means for creating art (Wilson). Learning how to program, use the machine and all the technical issues takes away from the time that could be spent being creative. Many artists have to "address the plethora of tools without concentrating on computers" (Wilson 9). The view of computers is held in regards to using the left side of the brain. The engagement of using the left side of the brain and back to the right is too much of a mix. Many artists would rather just engage in the traditional application of established various media. Also, as a tool they are not especially compelling because there is little artistic tradition relating to them. Artist want the look of hand-made that they feel can not be associated with computer generated images (Spalter).

Fine Arts Professor Kay Klotzback from Cumberland County College states "the direct process of the hand is removed. It seems too mechanical. All the images seem to look alike, basically manipulated photographs. The idea of a one of a kind original work of art seems to be lost. One major part that I feel is missing is the happy accident while using traditional media that allows for new ideas and techniques to develop. Students need to go on if a mistake occurs and be creative with resolving it and working with it."

"As computers spread into increasingly wider realms of daily life, some artists strive to identify their work in opposition to this movement "(Wilson 9). The idea of everybody using them pushes these artists into an anti-usage frame of mind, going against the trends. Several artist make the computer an issue in their work through a stance of active denial. They are in defiance of the trends of computerization (Wilson).

During many transitional times in the history of art, people have always asked "Is it art"? Prueitt claims "critics may have great difficulty cramming it into appropriate categories and some critics have claimed that computer art cannot be true art since it

is made by a machine" (Prueitt 2).

In Reconfigured Eye, Mitchell brings to light the question of authenticity and an original verses a copy. She states, "Digital images seem even more problematic, since they do not even have unique negatives. An image file may be copied endlessly, and the copy is distinguishable from the original only by its date since there is not loss of quality. Unlimited numbers of displays and prints may be fleeting like musical performances rather than permanent like paintings...Digital images can be copied without losing quality...one print is as good as another" (Mitchell 49).

Part Three

Teaching Strategies:

Today one of the contributing factors to the existing gap of using the computer in an art studio is the art educator's lack of knowledge for implementing this new medium into their fine arts curriculum. Art educators need help in making the leap from experimentation to application of using digital tools with traditional media. From my explorations into computer technology, I have developed a list of strategies for implementing various experimental techniques into computer generated images. I have demonstrated, several of these applications with students in workshops at different colleges. I have designed three different units with several ideas for various lessons within each that incorporate traditional media and digital tools.

Objectives:

Students will examine the actual space of the scanner in relationship to the space of a canvas.
Students will use software programs to transform images.
Students will examine the concept of the original.
Students will explore the options of using the output prints in various creative ways.

Unit One

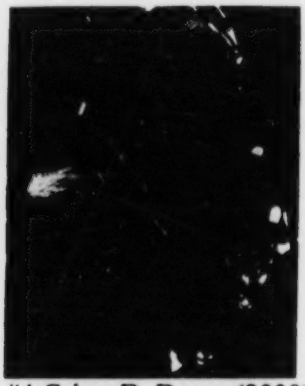
Students will investigate ways to combine painting, sculpture, and photography into digital images.

The first unit involves using the scanner and exploring the unique capabilities of this tool. Various objects and art forms are placed on the scanner and imported into the computer. The objects are placed with specific design intent. The objects are scanned into a software program, where digital tools can be applied to manipulate or alter the original image.

1.Scanning small sculptures. First have the students will create small clay sculptures. Then drape various backgrounds of material over the sculptures. The students are to imagine the sculptures in different settings. Various scanned options of changing positions can be explored. Students are encouraged to think about a series of scenes they can develop (See examples 2 – 4).

#2:Grimes, D.Hope (2000))

#3 Grimes, D. Faith (2000)



#4 Grime,D. Dance (2000)

2. Scanning materials to create a collage. Students will exam various traditional artists that have incorporated collage techniques into their work. Students will scan various materials (lace, cardboard, wallpaper, furs and fabrics) into the computer.

#5 Grimes,D Choices (2000)

#6 Grimes,D. Freedom (2000)

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3. Scanning body parts

Students will use different parts of their body that they put on top of the scanner bed. If they move the part while the scanner is moving the light source across, they will get different distortions in the image. The theme of self-portraiture can be explored.

#7 Grimes,D. Piercing Pain (2000)

Unit Two

Combining traditional and virtual materials.

1.Painting directly on the Scanner. Students will cover the scanner with a transparency clear plastic or a clear plastic tray. Students can then paint directly with watercolor, tempera or acrylic paint. In doing so the students will be using an actual material then applying virtual applications to the actual painting.

#8 Grimes,D. Blue(2000)

#9 Grimes,D. Gray(2000)

#10 Grimes, D. Death(2000)

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2.Traditonal Drawing Tools and Virtual Drawing Tools. Students can create drawings using traditional drawing materials, then scan the images into a software program where they can be altered with virtual drawing tools.

#11 Grimes,D. Recline(2000)

3. Photography - Digital Camera. Students can go beyond the literalness of a photograph by utilizing virtual photographic tools to create a believable reality. This is a great exercise because students can combine many art skills such as drawing, painting and photography into a seamless work of art.

#12 Grimes, D. Alone(2000)

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Unit Three

Printing – Various applications. Students will explore various materials that their images can be applied. The concept of "the one of a kind original" will be investigated by printing onto various papers such as rice paper, Somerset printing paper, watercolor paper colored papers, etc. Below is a list of applications and suggestions.

1. Printing on mylar paper, – using lights and Light boxes.
2. Transparent film to use on window to provide a stained glass look.
3. Print on fabric. Thin fabric is glued to paper, then feed into the printer.
4. Print on tiles. Use clear transparencies or iron-on application paper.
5. Print on plaster. After the plaster is hardened, place the ink-jet printer on top.
6. Create sculptural images from the printouts.
7. Paint on the output images.

Part Four

Conclusion

There is no doubt that the computer is a great tool for artist in the creation of Fine Art. The real question is whether or not the computer is the ultimate instrument in the creation of Fine Art. As technology improves, the history of its usage is unfolding before us. No other art media involves the constant change of of technology. One has to keep up with the rapid pace of new hardware and software. The history of civilization has seen many changes since cavemen drew on walls in France some 10,000 years ago. The technology for creating art has constantly improved from sticks, brushes and paints to video cameras.

Art Educators need to provide the exploratory experiences of using the computer into their programs. In general art schools isolate the Computer Graphics and Fine Arts programs from one another. When in fact many of the images

produced by both seem to have the same superficial quality to them. If an explority course like the one I have outlined is used, students will be exposed to ways of creating fine art on a computer. At a workshop for Graphic Design students at Cumberland County College on methods to integrate traditional techniques with the computer, the students were amazed at the different effects they could create. Their Art Department is now planning to incorporate a class similar to the one that I designed into their curriculum.

This medium brings to light many questions that were raised when photography was first introduced. In the beginning of its existence, like computer art, photography was not accepted as "fine art". Many art exhibitions did not include photographic works. The questions of visual reality, loss of the originality, and availability to the general public were frequently posed, but as time passed, these issues were resolved.

I feel the variety of teaching strategies I have presented will be a welcomed addition to any fine art program. The lessons will challenge students in developing work that will reflect a deeper meaning of using the computer as an art medium as we move into in the 21st Century. As art is a reflection of society, then computer art is probably the best media to reflect our current society.

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Distance Learning in Higher Education:

Road to Ruin or Soul of the New University?

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Distance Learning in Higher Education:
Road to Ruin, or Soul of the New University?

> A 35-year-old software billionaire said yesterday that he would spend $100 million to realize his vision of 21st century higher education: a giant free Web site that would provide access to ... the "10,000 greatest minds of our time," in lectures and interviews recorded especially for the venture (Steinberg, 2000).

Depending on one's viewpoint, this recent New York Times report exemplifies a masterful merger of business, technology and academia, or the ultimate affront to the values of traditional education. As public and private academic institutions, corporations, and entrepreneurs have rushed to embrace the new technology of distance learning*, the debate over its place in higher education has become increasingly polarized. The controversy is frequently characterized by stereotypes and prejudices, fueled equally by technological triumphalists and humanities Luddites. The latter condemn the unscrupulous and indiscriminate selling of degrees by virtual diploma mills, and exaggerate or overemphasize potential technological problems. The "technozealots", on the other hand, dismiss their critics as self-absorbed and self-serving antediluvians who are unable and unwilling to deal with today's students as consumers.

*Distance learning or distance education are used herein interchangeably for any means of providing access to instructional programs for students who are separated by time and location from an instructor.

Polarized arguments on the place of distance learning in higher education stem from looking at the issue as an either/or, mutually exclusive proposition- traditional vs. distance education. The issue is also clouded by an inaccurate view of distance education as a single entity. Moreover, faced with increasing opportunities and administrative pressures to redesign courses for distance learning, many faculty feel threatened by the new technology. They raise questions about oversight, quality control and longterm consequences of the new delivery system. The most serious reservations about the impact of this new learning environment have been expressed by such colleagues as historian David Noble of York University in Canada. Noble categorically rejects distance education, envisioning the establishment of "digital diploma mills":

> In his classic 1959 study ... Robert Reid described the typical diploma mill as having the following characteristics: "no classrooms", "faculties are often untrained or nonexistent", and "the officers are unethical self-seekers whose qualifications are no better than their offerings." It is an apt description of the digital diploma mills now in the making. Quality higher education will not disappear entirely, but it will soon become the exclusive preserve of the privileged, available only to children of the rich and the powerful. For the rest of us a dismal new era of higher education has dawned. In ten years, we will look upon the wired remains of our once great democratic higher education system and wonder how we let it happen. That is, unless we decide now not to let it happen . (1997, p. 7)

Noble's hypercritical assessment of distance learning is the result of university politics, specifically the coercive policies of the administration at his institution (York). Those policies prompted a two-month strike by full-time faculty for contractual protection against mandatory implementation of computer technology in education without faculty oversight or deliberation. The

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conflict at York is one specific illustration of conflict between the traditionally different roles of higher education administration and faculty. While faculty's significant issues and concerns are educational and philosophical, those of administrators are by necessity economic. The current enthusiasm among college administrators to offer on-line courses and programs is viewed skeptically by faculty who are aware that between 1970 and 1995 the number of full-time positions grew by about half, in contrast to a two and one half time increase in part-time positions (Feenberg, 1999). The trend toward hiring adjuncts and temporary full-time faculty has been especially strong at community colleges, where they have been in the majority for years.

This trend has been worrisome to faculty who have been faced with the challenges of increases in the numbers of nontraditional students and class sizes, and a reduction in traditional educational roles and values. They are alarmed by the prospect of administrative attempts to use the new technology of distance learning to package and market courses, and ultimately to replace faculty by an automated electronic system. Given the cost-cutting trend in higher education during the past twenty-five years, such a fear on the part of faculty is not surprising.

Noble's denunciation is representative of a significant number of faculty in higher education who are as wary of the present administration-dominated state of development of distance education as they are unfamiliar with the new teaching technology. Administrators, often quick to characterize faculty as

resistant and fearful of innovation, are now pressuring them to implement computer technology with little regard for deliberation on pedagogical implications. There is the distinct impression among a number of faculty that the new technological model of education being promoted by administration is intended to become a new economic model. Apparently, costly investments in technology are expected to yield a reduction in expenditures on facilities and faculty salaries in the future. The assumption appears to be that faculty, with a little training and retooling, will convert existing courses to distance learning models that will attract new students and eventually reduce the need for living teachers.

Such expectations for the use of on-line courses to replace traditional face-to-face classes and economize the college budget are unrealistic and unsound. They reflect a basic misunderstanding of the medium of distance learning and suggest the absurd concept of teacherless education. This view is as unwise as is the defensive systematic rejection of distance education by some faculty. The fact is that distance learning, while still in an adolescent stage of development, is a significant and exciting educational innovation. Faculty can not afford to be ignorant of the new technology and its applications, nor can administrators limit their perspective to economics. Institutions that dedicate themselves to commercial development and exploitation of this new field as a lowcost duplication of traditional classroom education are misguided. The technology

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involved in distance learning is not cheap, and the face-to-face classroom is in no danger of being deserted by students.

While there is already a significant and growing market for the virtual university, such as the University of Phoenix, this is no mandate to dismantle higher education. The tuition cost alone of the virtual university ($390-485 per credit at Phoenix) limits its appeal to the typical community college student. The major focus of these distance learning universities at present appears to be professionally oriented education for experienced and degreed employees in the business and technological sectors. The virtual institution is a significant and important area of higher education, but by no means poses a threat to traditional schools. Instead of rejecting or fearing distance education, energy and effort would be more wisely spent on incorporating the new medium and its enhancements into traditional institutions. Faculty, staff and administrators need to collaborate to develop viable applications to meet student needs. The first step is to become informed about this relatively new and rapidly evolving field.

For a full-time community college faculty member whose early teaching career was aided by the ditto master, and who only fairly recently mastered the manipulation of the mouse, the currently available technological resources are a source of wonder and at times bewilderment. My understanding of distance learning was limited by ignorance, informed mainly by secondhand impressions. In an effort to transform myself from a "technofeeb" to a "wired professor", I

have undertaken a virtual study of the subject in higher education. This involved spending many hours on-line visiting hundreds of websites, from those advertising the offerings of virtual universities, to those providing free information on developing and teaching on-line courses, to the distance education and information technology sections of the on-line version of The Chronicle of Education. It has been a fascinating tour of this area of cyberspace and overwhelming in the ever increasing amount of information available.

One conclusion is that distance education is not only here to stay, but has enormously exciting potential to expand access and learning. It is a rich professional field, with a rapidly increasing literature base, experienced practitioners and advocates, and resources. The concept of distance learning as automated and pre-packaged courses taken by isolated students is an outdated one. In fact, the latest information technologies can result in courses that are more interactive than some traditional classrooms. Furthermore, a highly interactive on-line course is much more labor intensive and time consuming for the instructor than the face-to-face class. Rather than a single entity, distance learning has at least three distinct forms: ITV (interactive televised), telecourses, and on-line courses.

As a community college educator, I find the most promising aspect of distance learning to be the extent to which its technology can be used in conjunction with collaborative/cooperative teaching pedagogies to create new learning environments and opportunities. This promise is suggested by the

newest term for the field—"connected education", which emphasizes the goal of connection rather than distance in on-line courses (Green, 2000).

Effective distance education does not consist of simply adding new technology to traditional methods of teaching and learning. It is not the act of linking learners with teachers through a medium of the camera, telephone, or computer, in an effort to reproduce the traditional, "ideal" classroom. The key to a more mature and accurate concept of distance learning is organization of educational resources into a total delivery system. In addition to faculty and students, it is essential for an institution to provide support personnel. These include a site facilitator, who may function as a teaching assistant or instructional designer to mediate among the needs of the instructor, course content, students, and technology used in the course. Additionally, there should be support staff to deal with issues from securing copyright clearances to managing technical resources, scanning and converting print resources into Web-ready form. Secretarial/office support personnel are especially helpful for faculty to manage course enrollment and maintain efficient and frequent communication. Specific tasks would include contacting students who have enrolled without providing email addresses, arranging for on-site orientation sessions, and following up on students who fail to attend on-site and/or on-line sessions.

Equally important is the need to determine which aspects of distance learning are appropriate for which type of student. Community colleges must be particularly careful to provide guidance for students in choosing appropriate

types of distance learning. For example, a course conducted completely on-line with no on-site meetings and that is print-based requires excellent reading and writing skills as well as disciplined study habits. Registering for such a course and expecting to succeed is unrealistic for many at-risk, underprepared community college students. Not only do these students lack the necessary academic skills, but they also have significantly low levels of access to and experience with information technology. Thus it seems inappropriate, if not irresponsible, to target these students as potential on-line course registrants. What the community college does have is a responsibility to help these students develop the knowledge and skills to use technology well and the ability to adapt to the rapidly changing Digital Age. Moreover, it is essential for faculty to adapt traditional instructional approaches to meet the diverse learning needs of their students.

An appropriate and potentially highly effective approach is a face to face course that is enhanced by distance learning applications. Such a class can provide increased opportunities for faculty/student and student/student interaction, promote collaborative learning, and develop students' computer literacy. Furthermore, effective use of appropriate resources can keep students more involved and connected with course material than in a traditional class in which students rarely participate or contribute to except during class meetings, if then. It is also possible for students to have more access to their instructors

than a couple of minutes before or after class, or traditionally underutilized office hours.

There are many ways to incorporate distance learning resources of e-mail, bulletin boards, web-pages, and computer conferences to enrich and individualize community college courses. E-mail can be used for informal correspondence by both instructors and students. Feedback from the teacher can be received more quickly than messages sent by mail. Even if students do not have outside access to computers, they can be given college e-mail accounts and be required to send and retrieve messages as part of the course. A by-product of these requirements is that students learn such basics as sending attachments and compiling email address books. Instructors can use e-mail to personalize feedback and notify absent students of missed work, or send messages to students who are falling behind. E-mail is also a means of helping students with different schedules connect with each other to do collaborative work. Even if they are registered for the same class, community college students frequently have very tight schedules which make getting together outside of class difficult. Communicating by e-mail facilitates completion of pair or group projects, and provides a printed record of the interaction for the instructor.

Another useful resource is a classroom bulletin board, or course conferencing system. Students can be required to write responses to questions or problems that were presented in class. In a classroom setting a question posed by an instructor might get only a few spontaneous responses by the most verbal

students. With the bulletin board assignment, in which students get to write their own responses as well as read the responses of their classmates, there is more opportunity for reflection. It is also less threatening for students who have difficulty expressing themselves in a traditional classroom setting. The bulletin board has the potential to stimulate critical thinking and problem-solving as students read, evaluate, and respond to different views on a topic.

The answer to the question about the role of distance learning in higher education is that it will be an integral component and core educational strategy of institutions in the very near future. At present, distance learning connotes students taking interactive television, on-line or telecourses off campus at remote locations. However, the most likely and promising scenario will be blended learning environments that combine distance learning applications with on-campus curricula. One subset of such an environment will be total on-campus delivery, while another subset will be the virtual, remote learning environment. At the community college, emphasis should be placed on connected learning which encompasses the application of technology to serve all types of learners. Traditional on-campus students could take occasional web-based courses when work schedules conflict with class meeting times. Additionally, traditional curricula will be supplemented by Internet-delivered materials and resources. An example would be student participation in an on-line interview of an expert in a field instead of listening to an in-class lecture by a professor.

Major challenges facing higher education are the demands of integrating distance learning into institution-wide systems and expanding the quality and availability of services for all learners and instructors. Students and teachers need more open access to resources and technical support. There is also a pressing need to supply all students, whether on-campus or at remote locations, with equal services such as access to libraries, bookstores, counseling, extra-curricular opportunities and technical support. Additionally, if administrators want faculty to embrace distance learning, there must be adequate classroom and office support to assist with increased time demands on instructors. Resources such as student and faculty help desk services, online assistance and training, and web sites with posting of frequently asked questions are essential.

At the community college the least promising forms of distance education are telecourses. In their present and most typical form, they are little better than correspondence courses, with little if any student/faculty interaction or student/student connections. The courses consist of videotaped lectures which may be commercially packaged and delivered by someone other than the instructor whose name is attached to the course. Students watch the tapes at home, take scheduled exams on-site, and complete other assignments, if any, at home. Such courses are obviously unsuitable for the vast majority of at-risk, underprepared community college students, who need much more personalized classes and human interaction to facilitate their learning.

Since Web-based learning is already replacing satellite and video delivery, it is vital that institutions develop comprehensive working plans for incorporating distance education into curricula. Additionally, although recent technological advances are changing distance education from primary reliance on the print medium, it remains the basis of present on-line courses. Evolving technology is producing high-quality digital visuals and audio in interactive packages that promote user involvement. This can be delivered on CD-ROM, DVD, or over the Web; however, high-quality delivery over the Web is merely nascent. Multimedia, graphics, and visualization tools available today can facilitate new modes of instruction. Multimedia courseware can be designed to enhance the presentation of course content in the classroom, offer resources that might otherwise be difficult to bring to a class, and make course administration easier. These resources and tools can lead to innovation in the classroom, and enable educators to change from text-based drill and practice exercises to complex text and image-based communication. At the community college, the optimum use of these resources requires new ways of communication and familiarity with the tools of distance learning. A strategic plan must be developed by the entire institution in order to serve the total needs of students, whether their courses are all on campus, off campus, or a combination of both.

Because community colleges have limited economic resources, they must be especially careful in planning how to offer connected learning options, keeping in mind institutional missions and goals. While distance learning is an

exciting medium, traditional teaching practices that have proven to be effective should not be abandoned. Basic principles of learning and common sense must be followed in developing and adopting distance instruction. The strengths and weaknesses of possible delivery systems available, such as audio, video, data, and print, must be analyzed in terms of method of delivery as well as student needs and course requirements before choices can be made about instructional technology.

Faculty cannot be coerced into accepting the challenges of distance learning; they need to become familiar and comfortable with the technical aspects involved and knowledgeable about the potential pedagogical benefits. Administrators must first provide institutional support for faculty professional development in this area, rather than simply pushing faculty to convert existing courses to on-line versions. Equally important is the necessity for faculty to resist offering today's students a college experience like that of Henry Adams (in "The Education of Henry Adams"), who remarked that he had received an 18th century education in a world hurtling into the 20th century, under a curriculum that had not changed in decades (Levine, 2000). Clearly, distance learning and its related resources have enormous implications for higher education; thus it is essential for institutions to maintain an academic focus, and not overlook the importance of curricula and qualified professionals in the haste to embrace the new medium.

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The Changing Aspects of Photography: An Educator's Notes
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THE CHANGING ASPECTS OF PHOTOGRAPHY:
An Educator's Notes by Geanna Merola

Introduction

Photography, relative to the other visual arts, has a rather brief history. The announcement of photography, not entirely free of criticism, was made in 1839 to a public that was generally very eager to embrace it. Similar to the traditional arts in some respects, photography was quickly recognized as being inherently a very different imaging tool. In her essay of 1857, just 15 years after the introduction of photography, Lady Elizabeth Eastlake wrote eloquently about the nature of photography. She described photography as supplying, ". . . the facts which are neither the province of art nor description, but that new form of communication between man and man - neither letter, message, nor picture - which now happily fills up the space between them. . . ".[1] In the 160 years since its introduction, photography, this "new form of communication", has become a ubiquitous, powerful, and penetrating presence in our lives. It has infiltrated our homes and environments, all media, art and culture. Photography is used to some extent in nearly all fields of interest and exploration. The expansion of photographic communication shows no signs of slowing down. The emergence of the Internet poses even further reaching demands for photographic imagery to provide for a greater variety of needs. Due to the prominent position photography holds in contemporary society, it is necessary to study it not only as a craft, documentary tool, or formal art but also as a comprehensive discipline that can be evaluated from a variety of perspectives crossing over time, functions and philosophies.

Some aspects of the technique and application of photography have remained remarkably similar to those evident at photography's inception and early development.

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The word 'photography', derived from the Greek roots 'phos graphos' meaning to write or draw with light[2], continues to describe appropriately the essential nature of a photographic image. It is still necessary to utilize some variant of a camera, lens or other direct method, to allow light to reach a responsive surface (either chemical or electronic) that will bear a record of the intended subject. In recent decades this basic definition of photography and much of the practice of photography has remained essentially unchanged, while the field as a whole has experienced a revolution. These changing aspects of photography include: more comprehensive and inclusive revisions of the history, a deeper examination of past photographs and photographic practices, the rise of photography as an elite art form and investment commodity, and perhaps the most stunning technical change since its invention – the advent of digital photography. Shifts in the order of photography have altered the established conventions of how the medium had previously been perceived, and have expanded the possible ways it could be utilized and taught. To establish a responsible, comprehensive, and challenging perspective, photography should be studied from a variety of considerations and approaches. To teach only the craft of photography, as a basic "how to", is to deny the rich history and complex network of information available from such an essential tool of communication and artistic expression.

The often-quoted insight of the preeminent Bauhaus teacher, artist and visionary Lazlo Moholy-Nagy has been realized. He stated in 1932, "...a knowledge of photography is just as important as that of the alphabet. The illiterates of the future will be ignorant of the use of camera and pen alike".[3] Moholy-Nagy was expressing an understanding of the ability of photography to become a new language, and that future

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educated individuals would need to know how to utilize and comprehend it. Photography will not recede from use. It has long ago transcended its previously limited role as the desirable tool for the aid of scientists, artists and writers. Photography has become a significant and sophisticated discipline in its own right, a prominent and effective visual language, and an essential aspect of communication.

A More Comprehensive Photographic History

For many years the publication that was held in the highest regard as the seminal history of photography was a work by the historian Beaumont Newhall. Newhall, a Harvard graduate who eventually became the first curator of the Department of Photography at the Museum of Modern Art, published a scholarly book in 1937 titled *The History of Photography: from 1839-1937*.[4] A pioneer in his belief that photography was an important discipline, Newhall's book continues to maintain an important place in the annals of photo-history. His text, revised many times and still in print, begins with the detailed accounts of the most prominent figures credited with the initial experimentation and the successful discoveries that led to early photography.

For many years Newhall's book remained a cannon of information for subsequent students and researchers of photography. As the history of photography took shape traditional information and specific images became standards for that history. These classic photographs were reprinted again and again in subsequent volumes of historic accounts. As the chronology of the history of photography progressed, references continued to originate from the same common points in time. England and France were especially noteworthy. Although some evidence reveals that discoveries were also

conducted in far reaching locations such as Brazil[5], Europe remained the epicenter for the discoveries leading to the invention of photography.

The history told from this "classic" perspective assumed an exclusive point of view. As late as 1982 the subsequent revisions of Newhall's *History of Photography*, still included only a small number of women photographers. It also overlooked so-named "minority" photographers including those producing influential works (such as James Van Der Zee and Roy De Carava) in the United States, where the author resided and the book was published. These oversights have been largely remedied in recent years due to a more diverse population of historians who are either researching independent topics that augment the existing cannons, or writing new more comprehensive surveys. Contemporary authors include such leading scholars as: Naomi Rosenblum, author of *The World History of Photography*, and *A History of Women Photographers;* Deborah Willis, author of *Van Der Zee: The Portraits of James Van Der Zee* and *Black Photographers 1840-1940*; and Vicki Goldberg, author of the *The Power of Photography: How Photographs Changed Our Lives*, to name just a few. Along with a growing number of other authors of diverse expertise, these writers have added important information that had been overlooked in the previously existing mix of historic information. While Newhall's book, ground breaking in its day, remains a significant and necessary reference, there are now many other written histories of photography and points of view from which to choose for teaching purposes. As photography's history continues to expand, staggering numbers of books have become available, providing monographs of individual photographers and overviews of various periods, projects and movements. This multitude of old and new information can be daunting at times but it better reflects

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the complex nature of photography and its interconnectedness to the history of the world. A variety of approaches to course work, research, and scholarship on the subject of photography can be constructed around this new abundance of information.

A Deeper Examination of Past Practices

When studying photographs made previously in the service of the sciences, documentary projects, or advertising, much can be learned about the intentions and societal effects of these various forms of photographic representation. In examining the trove of photographic artifacts produced over more than a century of time, insights into the nature of social attitudes and cultural practices can be recognized. Photographs often provided greater meaning when observed at a time well after their making, often revealing more than they originally intended to show. For example, photography came of age at a time when there was a growing interest in the scientific concerns of social and cultural anthropology. As a result the camera was often used in the field to record evidence that would accompany researchers' reports and findings. Clearly the photographs could show information in a way that written facts could not. Some of this practice was illustrative, but in many cases the photographs demonstrate the underlying power of the photographer's cultural advantage over that of the subject's. In the catalog for the exhibition *Site to Sight*, C.C. Karlovsky wrote, "All too frequently . . . anthropologists and photographers were influenced by their own preconceptions and prejudices, presenting in their images stereotypical attitudes and portraying societies or individuals as de-personalized cultural artifacts".[6] This characteristic becomes painfully evident in photographs such as those made by J.T. Zealy in 1850 of American slaves. These photographs commissioned by the Harvard scientist Louis Agassiz were intended

to support his racial theories, but above any evidence he intended the images have become blatant documents of one race's unwilling submission to the oppression of another. Photographs such as these from a range of anthropological research provoke us to consider the ways in which we view individuals who fall into the category of "the Other".[7] This practice often resulted in an equally great insight of the culture and psychology of those who produced the photographs as that of the "subjects" being studied. Attempting to understand photographs on this level helps to alter or reverse some of the adverse attitudes and effects of the originally promoted ideas.

A deeper social analysis of photography is an important changing aspect in the broadening attempt to understand the use of power and control of the photographic image. In more ambiguous cases the issue of dominance and exploitation can raise lively debate concerning issues such as human rights or cultural morality. Respected documentary projects such as the Edward Curtis photographs of Native Americans in the early 1900's, or images made for the Farm Security Administration in the 1930's, raise questions as to the power of the camera and vulnerability of the subjects. If we continue the practice of examining each other in order to know ourselves better, where are the boundaries and limitations? What good, if any, eventually emerges? These issues open provocative avenues for students to probe the reasons for the uses of photography and conditions of why and for what purpose photographs are made.

Less controversial than photographs of unwilling subjects but equally powerful at times, is the persuasive influence of much advertising photography. Here as well, the effects are often seen more sharply when observed from the vantage of a later point in time. How cleverly have advertisers utilized the photograph to persuade, convince and

alter opinion? What stereotypes and damaging messages may have been hidden behind the basic goal of persuading us to purchase a product? The overt intention is to sell us something but invariably there are underlying messages about our identities that may cumulatively have a damaging cultural effect.[8] Do we base judgement about ourselves and the assumptions we have about others on imagery that is fictional but is responded to as though it were real? Or, are we savvy enough to decipher these images as the fabrications they are and no more? Students should learn to break these visual codes and exercise their own critical thinking about them.

An important aspect of learning photography is to realize how to understand the ways in which it functions as a language. Learning to "read" photographs and to decipher what is being communicated in the photographs opens doors for further learning about society, culture and oneself. It introduces provocative discourse about what we assume we know through photographs, what we can only know through photographs and what photographs leave out. Roland Barthes, in *Rhetoric of the Image*, refers to the distinction between the literal messages in photographs and the symbolic message that is operational. He breaks down the process into these three catagories: Linguistic (as in captions accompanying a photograph), coded (the denoted messages), and non-coded (the connoted messages).[9] This framework can help to give students some direction in terms of a starting point for breaking into the visual codes of an advertisement or other image, and establishing for themselves the significance of the underlying meaning.

What Barthes describes is the potential of photography to be read, like a language. When accompanied by text, as in advertising or a captioned news photograph, there is a linguistic component that is also present. This can be the first method of analysis.

Beyond this linguistic level the photograph can still be "read". It is not difficult to demonstrate how adept we all are at deciphering and "de-coding" the photograph. The next level of information is based on what is actually recorded in the photograph, observing carefully what is presented and what and can be deduced from this information. The third level of this deconstruction begins to dig beneath the superficial aspect of the photograph to reveal the underlying meaning. This interpretation may differ from individual to individual and it is subject to many interpretive factors including cultural, national, practical, personal and aesthetic concerns. Photographs reveal a great deal in terms of the social or political messages they impart and it is an important component of cultural literacy for students to understand and experience this process of multi-layered communication. Students do not always recognize the fact that the encoded messages are present. The complexity of the conveyed message frequently is a revelation to them.

Photography Confirmed as a Fine Art

Another significant change in photography is its acceptance and stellar rise in the mainstream art world. Initially believed to be too mechanical a process to be considered a fine art, photography was relegated to separate clubs and societies. In the late 1880's, during the Pictorialist era, photography gained a marginal acceptance as a fine art. The medium claimed a greater recognition during the Modernist era beginning in the 1930's, and ultimately by the 1980's and 90's fulfilled its early ambition to be accepted as an elevated form of art equal to painting and sculpture. Today both vintage and contemporary photographs command high prices in retail markets and resale auctions. Photography is studied and written about by top scholars of art and art history, taught in

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art and art history departments of prestigious institutions and featured regularly in all the major art journals. Its current status has allowed photography to be extremely accessible to contemporary viewers. Never before in history have so many photographs been on view in the context of museum and gallery exhibitions at any given time. An extremely broad range of techniques and concerns are represented in the fine art photography market. There are virtually no limitations on what is currently an acceptable mode of expression. Styles vary to include the straight, documentary approach, manipulated and altered prints, commercial and journalistic approaches, formal or playful modernist traditions or postmodern work. Perhaps the recent passing of a new century and the start of a new millennium have prompted many contemporary artists to direct their attentions to producing works of art that utilized the processes popular before the end of the 19th century. Recently revived techniques include the daguerreotype (as seen in the work of Chuck Close), the tintype (recently used by Jayne Hinds Bidaut) and the collodion negative (glass negatives used in the recent landscape work of Sally Mann). This current trend of utilizing 19th century processes extends the range of photographic potential in opposite directions at once, with photography's earliest processes at one far end of the range and the most recently discovered processes at the other. The newest technology to be included in this tautly stretched extension of techniques is of course digital photography.

The Digital Revolution

While it is fully expected that fine art photography will continue to enjoy the current breadth of all possible applications, digital photography has begun to displace and will eventually replace the use of traditional media in certain fields of photography. One

initial area to experience a significant change is that of journalism, where speed is valued over aesthetics and quality reproduction. Digital imaging at some newspapers has entirely eliminated the use of the darkroom. The image is captured and sent to press directly with digital technology. Consider this excerpt: "At noon on January 20, 1993, as Bill Clinton took the oath of office for the first time, photographers recorded the event from atop a camera tower opposite the podium. Ron Edmonds, a photographer for the Associated Press, pointed a $20,000 digital camera at the officials and dignitaries gathered on the podium, snapped the picture and immediately dropped a PC card down a long pipe to a photo editor at an Apple Macintosh on the ground below the scaffolding. The pictures were transmitted to newsrooms around the globe in twelve minutes".[10] This was just the beginning. The broad acceptance of digital technology stands in a similar position to that which chemical photography occupied 160 years earlier. That is to say, it was initially nurtured by scientists and technicians, is becoming popularized in various specialized fields and the growing middle class market, and is beginning to interest artists as a serious fine art. Before the inevitable dominance of this new technology, there will be the need for much interfacing of the old with the new techniques, resulting in various combined approaches. In another fairly recent article in the New York Times, titled *Photo Companies Bet that Film is Far From Dead*, David J. Wallace offered this: "Digital cameras may be capturing as many as nine billion images a year . . . still only ten percent of the number of images recorded on film. But in the face of growing digital photo popularity, the market for scanned film-based photography will remain strong".[11] The technology used to create photographs will be decided based on the photographer's need. Colleges can provide traditional practices, alternative processes, new technologies

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or a combination of any/all of these. For example a negative can be made using a pinhole camera on standard film emulsion, scanned into a computer, digitally altered, output onto film again and printed using the 19th century technique of the hand coated platinum print. The single resulting image would represent nearly the entire history of photographic practices. This final image could then be placed on an Internet web site and distributed speedily around the world.

Additional Comments

Taking all of this information into account, photography programs can be organized, in terms of the curriculum, to reflect the variety of needs and desires of the student population that individual departments hope to reach. The new technologies can be introduced and integrated at any level in the learning experience (basic, intermediate, or advanced) but they should be introduced at some point. As the cost and accessibility of digital imaging becomes continually more reasonable it can be expected that growing numbers of the student population entering college will have a basic, if not fluent working knowledge of digital cameras and electronic photographic equipment. These new tools should be integrated into the general program so that there is not an overemphasis placed solely on the wizardry of the flashy electronics. Digital photography should be considered an extension of the existing culture of photography. The artistic and ethical issues raised about this new, highly manipulative process should be presented for thoughtful discussion.

Recognizing the current range of photographic possibilities, students can be encourage to work toward a style or application that is suited to their personal interests or career goals. If the possibilities seem boundless, they are. To the student this can appear

both promising and intimidating. There has never been a time of greater diversity in terms of the way a photograph can look, what meaning can be conveyed, or what artists intend. Students are best prepared to sort through the avalanche of imagery and potential meaning if they are also inspired to know about the history and lineage of the imagery that support its social, political or artistic meaning and purpose. There is no one correct way a photograph should look. Many great educators have believed that the essence of successful teaching is basically a mentoring process that allows students to find their own way. The influential photographer and educator Harry Callahan once stated, "I still don't believe you can teach anybody to be creative. All you can do is give them an environment".[12]

On the classroom scale the students' environment should be a supportive and safe place to explore, make mistakes and learn. On a broader scale, students should be encouraged to expand their circles of reference for experiencing and learning about photographs. As often as possible students should visit professional gallery and museum exhibitions to view photographs first hand. Much information is lost in the reproduction of photographs in books, periodicals and slides. There is no substitute for viewing original prints. The actual size, surface quality, technical characteristics and their combined effect are all a part of the viewing experience that can rarely be adequately conveyed in printed offset or computer screen reproduction. The exception to this would be the original digital image intended for electronic viewing.

After an effort to expose students to original photographic images by way of exhibitions and firsthand viewing of print collections, a good library of photography books is an essential resource. A serious collection of monographs, surveys of

photographic history, and writings on criticism and theory, is an essential aspect of a comprehensive photography program. Students must have an opportunity to explore a great variety of images and ideas on which to base their own images and critical thinking. Books offer insight to the many aspects, uses, styles and applications of photography throughout its history with text to provide insight to what the photographer or their contemporaries and critics had to say about the work. Students can use this resource to grasp the complexity of an art form they may take for granted and of which they are frequently unconscious. Assignments should be given so that students are required to utilize the library and to experience the connections that good research provides. A library of appropriate books offers an opportunity to understand full careers of photographers rather than quick analysis of singular images removed from their original context. Because basic photography is learned quickly and most students feel familiar with it immediately, the efforts and significance of heroic careers are often minimized or missed altogether. The relationship of photography to history, culture, science, and other fine arts is a very complex area of study not to be neglected, minimized, or oversimplified.

Summary

There is no question that the world has been profoundly changed as a result of the invention of photography. Photography has become an intrinsic part of nearly every area of contemporary life. It has become a critical tool for communication, manipulation, societal analysis, and intervention as well as a beautiful and arresting form of art. The potential and power of photography have been proven and, as with history or literature, we need to affirm and continually redefine its presence and function as a significant

educational tool. In addition to learning the craft of photography for its practical applications or expressive potential, students need guidance in navigating through the complexities of so much new information, reformulation of old information, and the endless choices to be made in the technical and artistic applications of photography.

NOTES

[1] Lady Elizabeth Eastlake essay "Photography", from *Photography: Essays & Images*, edited by Beaumont Newhall (N Y, The Museum of Modern Art, 1980), 94
[2] Naomi Rosenblum, *A World History of Photography*, third edition, (NY, Abbeville Press, 1997), 195
[3] Charles Traub, *The New Vision: Forty Years of Photography at the Institute of Design*, Quote by Lazlo Moholy-Nagy. (NY, Aperture, 1982), 71.
[4] Charles Hagen, obituary for Beaumont Newhall, NY Times, 1993.
[5] Rosenblum, 195
[6] C.C. Lamberg Karlovsky, foreword to the exhibition catalog, *From Site to Sight: Anthropology, Photography, and the Power of Imagery*, Melissa Banta and Curtis M. Hinsley, (Cambridge, Mass. Peabody Museum Press, 1986)
[7] Robert Atkins, *Art Speak*, (NY, Abbeville, 1990), 119
The Other: The concept of "the Other" refers to women, people of color, inhabitants of the so called Third World, lesbians, and gays – that is, all groups that have traditionally been denied economic and political power.
[8] Jean Kilbourne, *Still Killing Us Softly: Advertising's images of Women*, video recording (Cambridge, Mass, Cambridge Documentary Films, 1987)
[9] Roland Barthes essay, "Rhetoric of the Image", *Classic Essays on Photography*, Alan Trachtenberg (New Haven, CT, Leete's Island Books, 1980), 272
[10] Marty Katz, "New Digital Camera Blur Lines Between Amateur and Pro Equipment", NY Times, April 9, 1997.
[11] David J. Wallace, "Photo Companies Bet That Film Is Far From Dead", NY Times, July 1, 1999.
[12] Traub, 71

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The Use of Case Studies in the Microbiology Laboratory Experience

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THE PURPOSE OF THE LABORATORY

The laboratory by definition is a place for scientific work or research. For scientists, this means discovery, analysis, creativity and experimentation. Through experimentation the laboratory initiates the cognitive skills necessary for one to investigate natural phenomena using formal operational thinking. The skills that one acquires through the laboratory experience is used to investigate and challenge scientific theories.

In the microbiology laboratory the adult student learns how to apply microbiological techniques to everyday situations, such as food preparation and preservation, soil fertility, waste disposal, and the prevention and treatment of infectious diseases (Talero, 1993,xv). Microbiology students taking their first and sole microbiology course in preparation for a career in the medical and dental professions will immediately be struck by the additional relevance this science has for them. Allied Health workers are actually practical microbiologists-it is they who are charged with preventing disease transmission among patients, giving drugs to treat infections and diseases, caring for severely immunocompromised patients. Because these workers must be involved in daily hands-on care, assessment, and intervention, the ability to think from a microbiological perspective is a must (Talero, 1993,xv).

Through microbiology exercises the students are introduced to many aspects of microbiology, which allows them to gain manipulative skills, methods and theory necessary to interpret and analyze data. Hence, the laboratory is associated with the principle of "problem-based learning" which incorporates both the laboratory and case study methods. The purpose of this study is to apply laboratory skills and techniques acquired through the

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laboratory exercises, to resolve case study problems.

The basic principle supporting the concept of problem-based learning (PBL) is older than formal education itself: namely that learning is initiated by a posed problem, query, or puzzle that the learner wants to solve (Boud and Feletti, 1991). In the problem-based approach, complex, real world problems are used to motivate students to identify and research concepts and principles they need to know in order to progress through the problem. In a problem-based class, students bring their skills at acquiring and integrating information in a process that resembles that of scientific inquiry (Allen & Dutch, 1998, 3).

CHARACTERISTICS OF THE ADULT LEARNER

Adults come to a learning experience with general characteristics that have implications for teaching and working with them. They have had more experiences, different kinds of experiences, and differently organized experiences than those of youth, and they wish to relate their past experience to what they are currently learning. Materials should be applicable to situations or problems with which the learners can identify (Bock, 1979, 4-5). Adults learn better when they are actively involved in the learning process. The more they participate through discussion groups and other group techniques, and the more responsibility they are given for what happens in a learning situation, the more effectively they learn (Bock, 1979, 9). Hence, the laboratory sessions in the microbiology course encourages the adult learner to become active participants in the learning process which stimulates effective learning.

Students should always know why they are learning and toward what goal they are aiming. It is important that they understand what steps are necessary to reach a particular

learning goal, and what order they should come (Bock, 1979, 9-10). In the microbiology laboratory, using the case study method is an example of reaching a specific goal, which is usually identifying a specific microbe that has caused an outbreak and the procedures necessary to identify the microorganism.

A preponderance of community college students are early and middle aged adults as opposed to the late adolescence, and are capable of relating to active participation in the microbiology laboratory because of their own life experiences and their intellectual development. Therefore, they are formal operational thinkers or postformal operational thinkers. Based on Piagetian theory a person passes through various cognitive stages, but the highest and most sophisticated stage is formal operational thinking, which starts from age 12 years through life.

According to Jan D. Sinnott, a person who can use formal operational thought can think abstractly (can think about thinking) and can use hypothetical-deductive reasoning as a scientist would. Postformal thought, by definition, goes beyond formal operations to the next step in the hierarchy of sophistication of thinking operations by which individuals come to know the world outside themselves (Sinnott, 1998, 24). The postformal thinking adult will be able to choose a course of action and stick to that course of action based on having formal knowledge. Hence, having this cognitive skill can enable the learner to acquire new skills in the laboratory and to comprehend case studies.

CASE STUDY USAGE AS A TEACHING TOOL AND PROBLEM BASED LEARNING

Curricula which advocate PBL (problem-based learning) use case studies in some form (paper cases, simulations or real patients,etc.) With the intention of stimulating classroom

discussion within a problem-solving framework. While real patients and cases have always provided the framework for teaching in medicine in the clinical years, the practice of writing cases for the basic science courses within a problem-based curriculum is relatively new (Boud, 1999, 151).

In 1985, Harvard Medical School (HMS) launched the New Pathway curriculum in general medial education as a pilot project involving 24 students. Two years later the New Pathway approach was expanded to include an entire of 160 students and it continues in that mode today (with about 170 students). The HMS problem-based curriculum includes various teaching and learning strategies but the small group tutorial is central to the curriculum. Paper cases used in the tutorials not only generate discussion but also stimulate the learning of basic science within a clinical situation (Boud, 1999, 151).

The case method exposes students to problematic, real world situations and challenges them to apply course knowledge to analyze the issues and formulate workable solutions. It is based on real or realistic stories that present problems or dilemmas without a clear resolution. Cases (or "vignettes," as short cases are often called) are usually printed, but some are available dramatized on videotape and on interactive CD-ROM (Nilson, 1998, 119). Aside from the fact that students enjoy the case method, good cases are rich educational tools for the following reasons (Nilson, 1998, 119):

1. They require students' active engagement in and use of the material.
2. They help make up for students' lack of real-world experience.
3. They accustom students to solving problems within an uncertain, risk-laden environment.

4. They foster higher-level critical thinking and cognitive skills such as applications, and evaluation.

5. They demand both inductive and deductive thinking, compensating for higher education's focus on the latter.

6. They serve as excellent homework assignments, paper topics, and essay exam questions, as well as springboards for discussion, review, and cooperative group problem-solving.

AN EXAMPLE OF A REAL CASE STUDY AND ITS USE IN THE MICROBIOLOGY LABORATORY

Instructional Strategy:

1. After completing approximately thirty-two microbiology exercises over a period of eight weeks, the students have acquired laboratory skills and methods applicable to various clinical and public health situations.

2. Students are required to review the laboratory exercises to prepare themselves for real-life situations. The instructor will pose questions to students after reviewing several of the exercises, such as "How would you use this particular laboratory exercise in a real-life situation?", and "What would you do to investigate the problem based on the laboratory exercises that have been completed in the laboratory?".

3. Students will begin to formulate their own examples which help to stimulate and promote critical thinking.

4. The instructor will distribute a sample case study with an introduction and directions for the students. The case study may be designed by the instructor or taken from real-life

clinical cases that are found in the Morbidity and Mortality Weekly Reports or other sources.

Learning and Outcome Objectives:

A. Upon completion of this case study the students will be able to: A. Have a general comprehension about the particular case.

B. Critically analyze the case study.

C. Formulate relevant questions in relation to the case study for analysis.

D. Apply specific laboratory exercises and methods to investigate the case, which leads to clinical diagnosis of the microorganisms that caused the outbreak.

E. Suggest ways to prevent the outbreak from recurring in the future, which includes public health awareness and concerns.

THE CASE STUDY
AND
GUIDELINES FOR THE STUDENT

Guidelines for the Student:

1. Read the following case study and imagine yourself as part of a health team trying to investigate this case. Using your skills and knowledge that you have already acquired in this laboratory, list the laboratory exercises that you can associate with this case and give your reasons for choosing them. *NOTE: You're limited to the exercises that have been completed in the laboratory only.
2. List three bacterial organisms that might have caused this outbreak.
3. Suggest ways to prevent this kind of outbreak from recurring in the future.

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Food Poisoning
Associated with Fried Rice at Two Child Day Care Centers
Virginia, 1993

On July 21, 1993, the Lord Fairfax (Virginia) Health District received reports of acute gastrointestinal illness that occurred among children and staff at two jointly owned child day care centers following a catered lunch. This report summarizes the investigation of this outbreak.

The catered lunch was served on July 21 to 82 children aged ≤6 years and to nine staff; dietary histories were obtained for 80 persons. Staff and all children aged ≥4 years were interviewed directly; staff and parents were questioned for children aged <4 years.

Of the 80 persons, 67 ate the catered lunch. A case was defined as vomiting by a person who was present at either day care center on July 21. Fourteen (21%) persons who ate the lunch became ill, compared with none of 13 who did not. Symptoms included nausea (71%), abdominal cramps or pain (36%), and diarrhea (14%). Twelve of the 14 cases occurred among children aged 2.5-5 years, and two occurred among staff. The median incubation period was 2 hours (range: 1.5-3.5 hours). Symptoms resolved a median of 4 hours after onset (range: 1.5-22 hours).

Chicken fried rice prepared at a local restaurant was the only food significantly associated with illness; illness occurred in 14 (29%) of 48 persons who ate chicken fried rice, compared with none of 16 who did not (relative risk-undefined; lower confidence limit = 1.7); three persons who were not ill were uncertain if they had eaten the rice. The organism in question was isolated from leftover chicken fried rice (>10^6 organisms per gram) and from vomitus from one ill child (>10^5 organisms per gram) but not from samples of leftover

milk. Other food items (peas and apple rings) were not available for analysis.
The rice had been cooked the night of July 20 and cooled at room temperature before refrigeration. On the morning of the lunch, the rice was pan-fried in oil with pieces of cooked chicken, delivered to the day care centers at approximately 10:30a.m., held without refrigeration , and served at noon without reheating.
Following the outbreak, health officials from the Lord Fairfax Health District recommended to day care staff and restaurant food handlers that the practice of cooling rice or any food at room temperature be discontinued, food be maintained at proper temperatures (i.e., below 41 F(5 C) or above 140 F (60 C), and a thermometer be used to verify food temperatures.

Criteria for Evaluation the Case Study

The laboratory instructor must have several labs that he or she would use to investigate the case study to evaluate the students' answers, and a list of organisms capable of causing the particular outbreak. Students would also give their reasons for their choices. The follow information is: (1) a list of the exercises that can be used to investigate this outbreak, (2) a list of the possible organisms that are capable of causing the outbreak and (3) suggestions for prevention of the outbreak and recommendations.

Exercise 67 - Microbiology for Foods
Exercise 21 - Pure Culture Techniques
Exercise 23 - Population Counts
Exercise 34 - Temperature: Effects of Growth
Exercise 9 - Bacteria in the Environment
Exercise 11 - Smear Preparation
Exercise 14 - Gram Stain
Exercise 53 - Enterotube II System

Exercises 47 - 50 - Morphological and Physiological Characteristics of Bacteria which includes the following tests:
1. Growth on TSA Slants
2. Carbohydrate Tests (glucose, lactose, mannitol and sucrose sugars)
3. Methyl Red & Voges-Proskauer Tests
4. Catalase Test
5. SIM test for motility or the Hanging Drop Slide Test for motility
6. Nitrate Reduction Test
7. Starch Hydrolysis Test
8. Casein Hydrolysis Test
9. Fat Hydrolysis Test
10. Urea Hydrolysis
11. Hydrogen Sulfide Test
12. Citrate Utilization Test

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13. Litmus Milk Test
14. Phenylalanine Deamination Tests
15. Oxidase Test

Possible Organisms:

Bacillus cereus, Escherichia coli, Staphylococcus aureus

Summary of the Case Study:
The diagnosis of B. cereus food poisoning can be confirmed by the isolation of $\geq 10^5$ B. cereus organisms per gram from the epidemiologically implicated food. Fried rice is a leading cause of B. cereus emetic-type food poisoning in the United States. B. cereus is frequently present in uncooked rice, and heat-resistant spores may survive cooking. If cooked rice is subsequently held at room temperature, vegetative forms multiply, and heat-stable toxin is produced that can survive brief heating, such as stir frying.

Suggestions and Recommendations:
1. In the outbreak described in the report, vegetative forms of the organism probably multiplied at the restaurant and the day care centers while the rice was held at room temperature.
2. The day care staff and restaurant food handlers in this report were unaware that cooked rice was a potentially hazardous food. This report underscores the ongoing need to educate food handlers about basic practices for safe food handling.
3. Under-reporting of such outbreaks is likely because illness associated with B. cereus is usually self-limiting and not severe. In addition, findings of a recent survey about culture practices for outbreaks of apparent foodborne illness indicate that 20% of state public health laboratories do not make B. cereus testing routinely available. The testing for B. cereus should be routinely available for this type of outbreak.

RECOMMENDATIONS FOR CASE STUDY USAGE IN THE MICROBIOLOGY LABORATORY:

In order to use the case study method successfully in the microbiology laboratory, it is imperative to include basic information about the case, but eliminate some of the specific information such as the name of the organism that you want to find, also the suggestions and recommendations to prevent the outbreak. By eliminating specific information, it will encourage students to arrive at logical conclusions and to think critically. However, the instructor should limit the students to using laboratory exercises that have been completed, this helps to initiate creativity which may lead to the development of new laboratory exercises.

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What are these things
So small and meek?
Yet we must painstakingly try to seek.
Are they not important at all?
Is that the reason they are so small?
Oh yes, I suppose that's why indeed
But yet we must know them for our need.
In times of health and in times
of trouble,
Those small meek things are there
on the double.

By Dr. Jeanie S. Payne

BEST COPY AVAILABLE

Faculty Rage: When Professors Go Postal

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May 2000

Mike walked into my classroom, crossed diagonally to the far corner and sat down. He was ten minutes late for the class, as he had been for most every class, looked around and saw that a quiz was going on. He looked at the question on the chalkboard and squinted, pretending that he had trouble seeing the words, and moved to a seat in the middle of the room, next to his friend Michelle with whom he had a running conversation most every class. Then, in a magnificently clumsy display of surreptitiousness, he began copying what she had written. When he arrived for the next class, late, and got the quiz back with an F, he began some projectile muttering about how other people got a better grade for writing the same response and finally said, "is this the way you grade? Wait till the dean hears about this."

I invited Mike outside. In certain American settings, this would mean I was about to deliver a beating. But here, in the community college hallway, I spoke to him in slow, flat tones, (not at all like my usual rapid, highly modulated speech), "You have a choice, Mike. You can change the way that you behave in this class, or you can drop it and take it with someone else. This is no place for Junior High School behavior." Then I walked back in the classroom leaving, I hoped, a shaken Mike. However, what I really would have liked to have done was grab Mike by the shirt front, slam him against the wall and deliver a short lecture that began with, "Listen, Motherfucker!"

Reflecting on this moment of anger, I realized that during my career as a student I, myself, was more than once the cause of teacher rage. In 1957, when I was in the seventh grade, Mrs. O'Connor took me out into the hall and began shrieking at me about my disrespect for God and country having found out that, during assembly, while a psalm from the Bible was being read, I had intentionally been making the Girl Scouts in the color guard giggle by making grotesque faces at them. And as a college junior, I remember the red, contorted face of the instructor who demanded to know what I was thinking by doing the *NY Times* crossword puzzle while he lectured

on Henry James. He was not mollified by my assurance that I heard his every word while filling in 27-across.

So perhaps to atone for the rage that I incited, perhaps to provide therapy for myself and others, I began an exploration into the concept of *faculty rage*. What is it that provokes instructors to intense anger in the classroom? How do instructors act on those feelings? And what alternatives do they have to the highly anxious moments of building that rage, acting on it, and dwelling on it forever after.

Methodology

The author interviewed approximately 400 faculty at eight community colleges, seven in New Jersey, one in Pennsylvania. Faculty were selected at random dependent on who were in their offices at the time interviews were being conducted and who did not immediately assume that the interviewer was a book salesman and summarily pretend to be too busy to be interviewed. Consistent with the demographics of community college faculty, a majority of the interviewees had been teaching for more than 20 years. An attempt was made to speak to faculty in a wide range of disciplines.

A quantitative analysis would have examined correlations between the discipline taught, length of time in the profession, gender, and age of the professors surveyed and the rage that they flew into as a result of their relations with students. This paper does none of that. Furthermore, since all of this information is based on self-reporting, there is no correction for outright lying. In fact, one faculty member who described himself as mild-mannered was reported by a colleague to have chased a student full tilt out of the classroom and across an athletic field when that student declined to answer to an instance of disrespectful behavior.

The Rage Experience

Upon being asked whether they had ever lost their temper with individual students or a whole class, most faculty responded in the negative and denounced such behavior as

unprofessional and characterizing their own dispositions as too moderate to be provoked. However, in all but a few instances, after being prompted with words like *frustration* and *irritation*, most faculty recalled that *one* incident when they lost control and that revived memories of additional instances and after a few memories the full experience of rage was recreated with much of the discomfort intact. Most faculty claimed that incidents of rage occurred early in their careers, but that years of experience had brought detachment and equanimity. Most faculty claimed to have lost no sleep over incidents of anger and implied being in possession of great inner peace.

The rage faculty admitted to included both the silent, mightily suppressed seething, hissing feelings that might only be betrayed by darting eyes, strained voice, flushed face and tightened midsection as well as the outright explosion identifiable by shrieking, cursing and even throwing. Often instructors apologized to students after losing their tempers no matter how justified that temper loss was.

Patterns of Provocation

Disrespect: Despite the seemingly protected intellectual nature of their environment, faculty tend to be enraged by the same stimuli that provoke despotic rulers, mafia chieftains, and military commanders: lack of respect, lack of respect for the educational process, lack for respect for fellow students, and lack of respect for the instructors themselves. One English instructor said, "I'm in charge. I have 28 years experience. Everyone should be listening. I have important things to say. They [misbehaving students] are interfering with other students." When respect is not forthcoming, rage comes forth. When an art instructor noticed that a student was sitting faced away from him during a lecture (and was chewing tobacco which he spit into a big cup), the instructor asked, "Can I see something instead of the back of your head?" When the student didn't move, an infuriated instructor yelled, "Turn around! I'm speaking!"

Glaring disrespect arouses more than a glare as occurred when a history professor asked a student who had walked out of class and returned twice. "What's so important out there?" he asked. "None of your business," answered the student. Explosion! As one math instructor reflected angrily recalling an incident where a student would not shut up, "After I've treated them with respect!"

One Developmental English instructor said, "Most of my rage is personal affront when people don't listen to me. I am trying to take them somewhere and they're completely dead weight. I feel I've wasted my life." Another instructor, reacting to yet one more unprepared class, said that he felt "insulted and disrespected, in an abyss, that all of this [education] is meaningless. Maybe it's time to retire." One speech instructor observed that unlike in the past when instructors lectured and students listened, "we now expect more and when students don't respond after we've prepared elaborate activities to involve them, we feel betrayed and walk out."

Modern technology seems to be creating new opportunities for infuriating student disrespect or rudeness. Several instructors reported sarcasm and belligerence in student emails, exchanges that they believed would never have happened in person.

***Academic under-performance*:** When students have not done the reading, can't answer simple questions about material covered during the previous class, or if half the class or more fails an exam or fails to hand in papers instructors may react with frustration, disappointment, sadness—or fury.

For weeks, one math instructor was irritated by students too lazy to bring their textbooks to class. When a woman who persistently walked in late (always holding hands with her boyfriend) asked the instructor from the back of the classroom, "Could you read the problem to me?" the instructor recommended that she sit in front so she could see better. When she responded, "I can't see. I'm on medication," the instructor exploded. "What does it matter. You won't do the work anyway. You don't care!" After the incident, the instructor felt he had behaved

unprofessionally and apologized, but the apparent indifference to or disrespect for education had driven him over the edge.

A philosophy instructor asked a student in an Ethics class what Roe v. Wade was. "I don't know," said the student. "Did you read the book?"

"No," replied the student.

"Do you have the book?"

"No," replied the student.

Similarly, a Business instructor asked his class while they were studying the Stock Exchange, "Where is the New York Stock Exchange? What is traded there?" When there was no response, the instructor screamed, "You didn't read. You're responsible!"

Often for instructors the incitement to rage is recurrent. When one English instructor regularly finds himself facing a class that is not responding to the course or that comes in repeatedly unprepared, his level of frustration grows and seems to take him by surprise. Struggling to look his students in the eye, his voice husky with rage, he tells them, "One half of this class is on its way to an F! Participation counts. You have to convince me you're doing the reading." He takes the anger home. Sometimes he stays annoyed. Sometimes he's resigned. Sometimes he sublimates his anger by increasing the number of quizzes or giving harsher feedback on papers. The classes become increasingly uncomfortable. He remembers being furious with a developmental reading student who told him, "I never do work for this course. It's too easy." When only five out of 22 students hand in an assignment, or 6 out of 20 claim they didn't have enough time after returning from two weeks of vacation—common, generic situations—rage results. One instructor shouted, "The semester is over. Just get out of here. I don't care if you never come back." Another turned to his class and said, "You have a quiz tomorrow. No more discussion," and walked out. Cranking up the number and rigor of exams and exiting class in a fury was a not uncommon response to persistent student under-performance.

Student incompetence has worn down many an instructor, especially when accompanied by irritating behavior. One student in an economics class persistently stopped the instructor after the introduction of each new concept with, "Wait, wait, wait! I don't understand." Then she'd make faces, bat her eyes, and address the rest of the class, "Now do any of you understand what she said?" Finally, an angry instructor told the student that perhaps if she read the chapter before class, she'd have an easier time with the concepts. Later, in the instructor's office, the student protested, "You embarrassed me by saying that in class," which really pushed the instructor over the edge who could no longer refrain from telling the student, "And I don't like your cutesy-type attitude." One English instructor spoke of the silent rage, a sense of violation, that he feels when students, after being chastised for their misbehavior in class, complain to a dean about being publicly humiliated and are thus able to turn the problem away from themselves and onto the faculty member.

***Cheating*:** For faculty, much of the rage inspired by cheating is not just in response to the dishonest act itself but to the apparent unconsciousness of students that they have done anything wrong. Each of the following incidents, representative of many more instances of academic dishonesty, provoked intense faculty anger. A math student was caught copying answers from the student next to him. Unfortunately for him, the other student had a different version of the exam. When the student was confronted, he insisted that he be given a second chance. An accounting instructor observed two men conversing and sharing test papers during an exam. When he told them that they'd both get an "F" in the course, the students went on the offensive, "It's your fault," they said, "You should have said something." A statistics student put an exam under her shirt and began to leave the class. When the instructor demanded that the student return the exam explaining, "It's my exam, my property," the student refused and complained to the college administration that the instructor was harassing her.

An Information Systems instructor who allowed foreign students to use dictionaries during exams, noticed that one student was looking at notes that she had hidden in the dictionary. "Do you realize that this is cheating?" the instructor asked. "This is how I study," answered the student. When the instructor said, "This is cheating and it's wrong!" the student gave the same response. With each iteration, the instructor's voice got louder until she was screaming. "I got crazy." Another computer teacher was handed a program by a student who had had not bothered to remove either the name or the comments of the person who actually wrote the program. With a straight face, the student denied that it was someone else's work. "Do you think I'm that stupid?" shouted the instructor, her heart beating hard.

When an athlete was caught cheating on history exam and given a zero ending his athletic career at the college, he appeared in the instructor's office and argued for a grade change. Feeling his ire beginning to rise, the instructor said, "This is over." Later the instructor's anger was compounded when he got a call from the coach who said, "You can't do this. He's my best pitcher."

Debates about Grades: Student arguments, often circular, often lead to faculty rage. One biology instructor bristled over lines like, "I studied for this test. I don't think this grade reflects my effort," and "You didn't tell us we had to know this." In a very strong voice, an English instructor finally told a student, "You are really annoying me," after the student refused to take any responsibility for handing in a paper three weeks past the deadline and insisted that the instructor was being unfair. When a student in a Speech class claimed that the instructor promised him an A but gave him a B in the course, the angry instructor directly confronted the student with, "You are accusing me of lying!" Dwelling on that incident, the instructor says, "I felt good giving that B." A sociology student who got a non-transferable D in summer course accused the instructor of inconsistency between the syllabus and the class. The outraged instructor screamed at the student for "off-the-wall fantasizing." A student in a composition class, who was absent several times and

never handed in a required paper, could not understand why he got a mid-term warning grade and proceeded to argue with the instructor for over an hour after class. The instructor seethed, and said that the incident ate at him, "It boggles my mind. How are high schools preparing students academically?" Another English instructor was accused of lying by a student, who claimed that she had been promised a better grade if her attendance improved. In fact, the instructor said that her work had to improve too, and he was furious that the student would invent such a charge. Other grade related stimuli that set instructors off include refusing to accept the instructor's reasons for marking an answer wrong, wanting to know why a half point was deducted on a test, a challenging, belligerent, "Why did I get this grade!" and, most irksome, students demanding grades that they don't merit.

After what faculty perceive as disrespect for the academic process (education?), the other broad area that provokes faculty rage is perceived disrespect for the instructors themselves manifested in disruptive talking and indifferent attendance.

Talking: For most faculty, the ideal classroom is the lively classroom. However, when the liveliness is independent of, or working against the instructors' attempts to instruct, rage ensues. A student talks to a friend during class, continues to talk after being asked not to several times, many times, for two to three weeks, then sits there with an "attitude" and talks even more. "We're not going on until you get out of here," screamed one ESL instructor. "You can't behave that way in this class." An economics instructor repeatedly asked a young woman to stop talking to her friend during class. (Tellingly, the student was eating lunch under a sign that said "No food in classroom") Finally, the instructor walked over and asked the student a question to which she answered, "I have no idea." "If you paid attention . . . " began the instructor, in response to which the student screamed, "You have no right to put me on the spot and embarrass me." The instructor, feeling intense anger, but controlling her voice, invited the student to leave if she didn't want to learn. The student said she had paid for the course. The instructor, intent on not letting the

rest of the class know how enraged she was, told the student that she paid for the *privilege* of taking the course, "and if you disrupt the class you have no right to be here!" One physics instructor presents her class with her policy. If they are asked three times to stop talking, she throws them out the class. "It's not fair to the other students. They pay for the course."

Anger welled up in a math instructor when some students didn't stop talking and others started packing up their books before the class was over. "I'm not done yet!" he screamed. An anthropology instructor stopped in the middle of lecturing when she observed a group of students (pals from high school) passing notes to each other. In an icy voice she said, "I hope this is the last time I have to do this. There are no chains keeping you. Why are you here?"

And one English instructor had an entire semester ruined by three young women who refused to stop talking. He asked them politely, then got angry, then asked them to leave and threatened to call security. Despite the horrendous impact upon the instructor, the students seemed oblivious of their behavior, not at all hostile, and at the end of the course said that they liked it. At the end of the course, he told them, "I don't want to see any of you in any of my classes ever again!"

The scenario is an oppressively repetitive one that crosses all disciplines, from psychology to nursing, from business to chemistry. Students are engaged in side conversations, talking among themselves in groups of two, three, five. Some have their backs to the instructor. The instructor warns them once or twice then blows up, "I can think of something better to do with my time," and either walks out and slams the door shut or continues a tirade. Several instructors admitted to turning to their classes and yelling, "Shut the fuck up!" Sometimes the instructors apologize at the next class meeting. Sometimes the shocked or abashed students are reformed. Sometimes there is no change in student behavior and the instructor, hating to face the class, glowers for a whole semester.

Attendance and Lateness: Almost all instructors have become enraged by students who, after missing several classes, ask cheerfully, "Did I miss anything important?" or who announce

at some random point in the semester that they are going on vacation for two weeks. "No, you're not excused!" growled one Business instructor. "You should have thought about your vacation when you signed up for this class!"

A History instructor established a lateness policy (three latenesses equals one absence) and was challenged by a persistently late student, in the middle of class, who insisted on discussing the policy "now!" When the instructor said later, the student said, "I'm going to kick your ass." A furious instructor told the student that if he did not leave immediately, he'd call security. A student comes into an English class late and tells the instructor that he has to leave early. He repeats the pattern in the next two classes. At this point the angry instructor stops the student and says, "You can't come and go as you please." When the student begins to tell a story about his car and his mother, the instructor snaps, "If you can't take care of them, then you can't take the class!"

A sculpture instructor told a student who had been late every class for eight weeks that if he was late one more time, she would fail him. The student did not believe her, came in late once again, and the instructor shouted, "You're out!" The student picked up his objets d'art, smashed them, and walked out.

Student surliness added to lateness guarantees instructor rage. One English instructor asked a class if they had any questions. A persistently late and uncooperative student who claimed to want assistance but had also claimed that his schedule precluded coming to the instructor's office, ever, responded in an unpleasant tone of voice, "Yeah, I have a lot of questions." Why do I have to deal with this, reflected the instructor suppressing rising rage. "I came to college to get away from this."

One psychology instructor was furious when a student sauntered into class after not having been there for six weeks and said he hadn't been feeling well. "Where have you fucking been?" demanded the instructor. "Sloan-Kettering," answered the student. The instructor's rage was instantly transformed

Social Issues: Faculty tend to have strong political or social convictions, and a number recalled having exploded when student remarks offended those convictions. One professor recalled behaving in her term "inappropriately" in a Social Psychology class that was dealing with racism and aggression. She had just seen the Rodney King beating tape on TV when a student said something with which she disagreed, "I walked up to him and jumped down his throat." One English teacher called a student into her office for a "teacherly discussion" on racism after he used of the word "nigger" in an essay. The student interrupted her with, "You just feel that way because you are a woman!" "How foolish can you be?" screamed the instructor. "I control your grade!" Later she apologized to the student convinced that she had abused the student-teacher relationship

A Marketing and Management instructor lost her temper when two male "international" students who were involved in a group project got the two female students in the group to do all the work.

A psychology instructor was infuriated by her students' cruelty when they laughed at a child with a broken jaw in a film about child abuse and laughed similarly in response to a film about a man who had suffered crippling memory loss film following brain injury and yet again when a student yelled out, "Look at the freaks!" in a film about multiple genders.

One Business instructor was enraged when he discovered that two students had made racial attacks against a Muslim student on-line—technological offense. He wanted the two students suspended, but was told it was a free speech issue.

Bizarre Behavior: A final provocation of faculty rage is the aberrant student, the bizarre being who is so gifted in uniquely irksome behavior that the instructor goes wild with anger. One anthropology instructor intoned, "If you lose your temper in the classroom you lose a lot more than your temper." However, she recalled an incident where a large black rat appeared in her classroom to which she responded, out of fear, with, "What the fuck is that?" When one of the

students explained that this was his pet which he had brought to class because it was too cold to leave in his car, the instructor's fear changed to rage and she screamed, "Get the fuck out of this class, take that rat with you and don't come back."

A student in an art class thought it would be cute if he ate part of the still life, a star fruit. The instructor who had spent much time setting up that still life was moved to scream at him. Two women in a psychology class were so happy that their instructor was reviewing material for the final that they broke into a chorus of "Color My World." The instructor was so outraged that he canceled class and "stormed out in righteous indignation." The students tracked him down, explained that they'd been drinking their lunch, and apologized.

One math instructor saves incidents of bizarre and infuriating behavior to recount at social gatherings. She had a student sitting in the back of her class who began playing guitar. She asked him to stop. He kept on playing. She pointed at the student and jerked her thumb toward the door. "Now?" asked the student. "Now!" yelled the instructor. She also had to deal with a student who exposed himself to several women in the class. The instructor confronted the student who lied and denied the accusations.

Perverts are not restricted to math classes. One English instructor recalled a student bringing a friend of his to class. When the instructor turned off the lights to show some slides, the "friend" began masturbating in the darkness. The instructor went over and hissed in his student's ear, "If you don't get that asshole out of here, I'm going to hit him on the head with a chair!"

A number of instructors have found themselves plagued beyond patience by students who speak to them before, during and after classes, follow them to their offices and into the bathroom and then call them at home. The instructor at one institution, hovering on the borderline between extreme irritation and rage, sent the haunting student to the disabilities counselor who discovered that the student had been diagnosed as having Borderline Personality Disorder. The prescription was to set well-defined limits on when the "needy" student could visit or call the instructor.

A ceramics teacher had a peculiar older student, disruptive and given to odd responses to assignments. Toward the end of the semester when students were told that past a certain date no pieces would be put in the kiln, the peculiar student became belligerent and said, "I paid my tuition. I'm getting my husband." After a semester of putting up with the student's disruptiveness, the instructor blew up, "Get out or I'll call the police."

Psychiatric cases are not uncommon at colleges and are a not uncommon instigation to faculty anger. One English instructor had a student, under psychiatric care, who demanded attention, talked non-stop in class, interrupted other students, was hated by other students, called the instructor incessantly and wouldn't get off the phone and then began threatening her when she did not get the grade that she wanted on a paper. The college finally took out a restraining order preventing the student from coming on campus but allowing her to complete the course by mail.

But there were also tales of aberrantly angry faculty (rarely the individuals being interviewed), people who threw chairs and books across the room, spat at students, or called them fat sows. One literature instructor came into a class, found the desks not arranged for a presentation as he had directed, and started ranting at his students, "You're a bunch of fucking morons!" He felt awful afterwards and admitted the anger was totally irrational and related to problems outside the classroom. The students told his chairperson that the instructor had been acting insane.

Coping

While some faculty are driven by rage into going quietly or noisily mad (or retiring), most have found some means of coping. Most share their experiences of fury with office mates and family members or achieve catharsis by regaling friends at parties with tales of the outrageous and then are able to laugh about the incidents. Sometimes this venting is mistaken for hatred.

Some faculty bring up their moments of anger at department meetings. One art instructor said that she needs to talk to colleagues to insure that her anger is justified, that she is not acting

maliciously or out of prejudice. One college holds monthly faculty meetings where participants are encouraged to bring their moments of misery and elicit the support, advice and various perspectives of colleagues. One marketing instructor writes emails to the students that have enraged her telling them what she thinks of them, but she never sends the emails.

Some faculty are in therapy. A chemistry instructor who told his therapist about shouting at his students, "What's the matter with you!" when they just sat there looking at him after he asked them a simple question, was advised that "anger was an effective tool, but it must be used as a tool. If you explode, it's not effective." A biology instructor did use anger as a tool. He said it made students conscious of their own behavior and apprehensive that misbehavior might bring on another explosion by the instructor.

A number of faculty have developed multi-page lists of rules that students are forbidden to violate—essentially lists of things that drove the instructors crazy such as: talking during lectures, lateness, slouching, obvious yawning, sleeping, eating, currying favor, doing work for other classes in class, walking out of class without prior permission, or packing up books before class is over "No excuses with late papers. I've heard them all." No beepers or cell phones "unless you are a doctor, nurse, firefighter or EMS worker." One instructor greatly reduced the irritant of multiple family deaths among students by eliminating make-up exams.

One English instructor, who was apt to storm out of class when students were unprepared, decided that perhaps he was expecting too much of them, that perhaps he did not understand the various factors that kept them from completing work. Now he prepares differently, gives out more hand-outs, and his anger has turned to sadness.

Several instructors made a point of trying not to take student performance personally, that it is not an indication that there is something wrong with the instructor, and of not taking classroom tension home. Some claimed success.

Some faculty reduce their rage through medication, some through cocktails; some practice meditation, tennis or karate. One remedial reading teacher bowls and sees each pin as a problem student.

Several of the faculty being interviewed remarked, spontaneously, that this interview process itself was therapeutic.

Conclusions: Faculty entertain certain, perhaps deluded, expectations of students: some degree of academic seriousness and some decorum in the classroom. When these expectations are not met, faculty may react with rage. Presumably, faculty members who are aware of what enrages them have several courses of action to take. Recognizing that an infuriating stimulus is appearing, instructors might be able to establish immediate distance, breathe deeply and avoid rage. Or instructors might, with total awareness, give full vent to their rage taking comfort in the unconscionableness of the provocation. Faculty might follow the model of their colleagues who have codified infuriating behavior and distribute such a list to their students essentially daring them to cross the line and incur unimaginable wrath. On the other hand, students might use this knowledge as a guideline for the behavior they can employ to push their instructors over the edge, and there are plenty of instructors in this stressful profession close to the edge and ripe for the pushing.

The Continuing Crisis in Remedial Mathematics

by Kathy Shay

Middlesex County College

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In the fall of 1999, Middlesex County College witnessed a dramatic increase in the number of incoming students needing remediation in math computation. Once the placement test results were tallied, 1,441 students were found to be deficient in basic arithmetic skills and were placed into Basic Mathematics (MAT 010). This was an alarming increase over previous years.

Not only did the number of students requiring MAT 010 increase, but the passing rate for this course dropped below 50 percent. Retention was also a problem. More than 60 percent of the MAT 010 students who enrolled in the college in the fall of 1999 did not enroll for the spring of 2000. It is estimated that only 340 of the original 1,441 students successfully completed MAT 010 in the fall semester and returned to the college in the spring. Another 215 students who failed MAT 010 in the fall enrolled in the college for the spring semester. Nearly 900 of the 1,441 remedial students who registered in September 1999 were gone from the college by January 2000.

These unfavorable outcomes occurred in spite of extensive efforts made at the college and at the K-12 level to improve students' understanding and achievement in basic mathematics. At Middlesex County College, classes were offered using the Academic Systems software, which provides a multimedia, individualized approach to instruction. In other classes, group projects were used to motivate students. At the pre-college level, it was anticipated that students would have benefited from the reforms in mathematics education that had taken place over the past decade.

Ten years earlier, the National Council of Teachers of Mathematics (NCTM) had released its Curriculum and Evaluation Standards for School Mathematics, which heralded a new era in mathematics teaching and learning. Throughout the 1990s, wide-scale teacher training programs implemented the reforms set forth by NCTM. A greater emphasis on problem solving, communicating mathematical ideas, and constructing one's own meaning and understanding of concepts are key components of the NCTM Standards.

In 1996, the New Jersey State Board of Education adopted the Core Curriculum Content Standards. The New Jersey mathematics standards are aligned with the national reforms and are expected to raise the achievement levels of all students. NCTM[1] reports that this indeed has been the case on a national level:

- *Student proficiency on the National Assessment of Educational Progress (NAEP) mathematics assessments has significantly increased at grades 4, 8, and 12 between 1990 and 1996, representing approximately one grade level of growth at each grade level.*
- *Average SAT-Math scores have increased from 500 in 1991 to 512 in 1998.*

One might expect that the freshman class of 1999 benefited from the "new math" instruction and would begin college better prepared than students of the past. Clearly this was not the case at Middlesex County College.

The summary statistics prepared by the College's Office of Research and Planning belied the significant increase in the number of new students placing into Basic

[1] NCTM (2000, April). Setting the Record Straight About Changes in Mathematics Education. http://www.nctm.org/news/speaksout/commonsense.htm

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Mathematics. These statistics are reported in Table 1 and are illustrated in Figure 1 below.

Fall Semester of Year	Number of Students Tested	Number of Students Requiring MAT 010	Percentage Requiring MAT 010
1993	2,952	1,193	40.4
1994	2,729	1,198	43.9
1995	2,671	1,135	42.5
1996	2,514	1,068	42.5
1997	2,511	992	39.5
1998	2,765	1,167	42.2
1999	2,587	1,053	40.7

TABLE 1

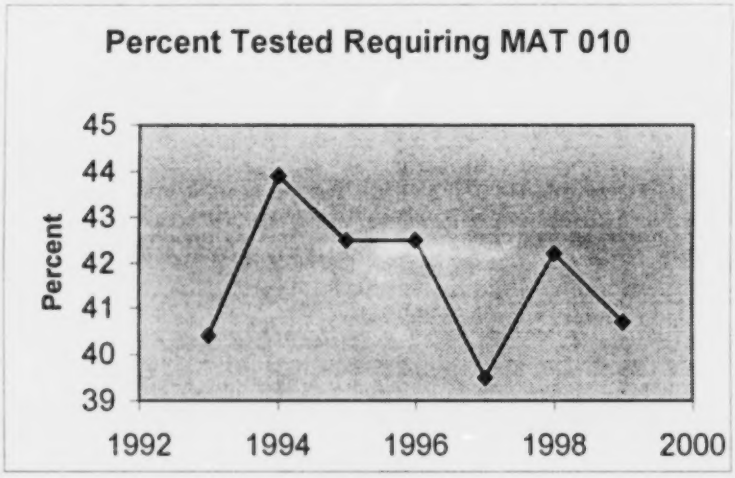

FIGURE 1

If anything, these data show a decreasing trend in the percentage of students requiring Basic Math. The sharp decrease in 1997 can be explained by the changeover from the New Jersey Basic Skills placement test to the Accuplacer exam. When adjustments to the placement scores were made in 1998, the percentage returned to the

1996 level. The apparent drop in 1999, however, contradicts the increasing number of students who placed into MAT 010.

A closer look at the data reveals that only 1,053 students were counted as requiring MAT 010 in the fall of 1999. Indeed, 1,441 students fell into this category at the start of the semester. The Office of Research and Planning bases its figures on enrollment as of the tenth day of the term. Nearly 400 students who registered at the College and who placed into Basic Mathematics were no longer enrolled by the tenth day. Although similar figures for prior years were not available, college officials have stated that the 1,441 count is disturbingly higher than any such count in the past. Rather than seeing a reduced need in providing the most basic remediation for students, the college has witnessed increasing numbers of unprepared students enrolling. Of the students who remained, success rates were low. A random sample of these students was obtained for further analysis.

The Middlesex County College Sample

In the fall of 1999, the tenth-day rosters showed an enrollment of 944 students in Basic Math. Some of the 1,053 students that were counted by the Office of Research and Planning elected to postpone their mathematics requirement while they worked on remediating reading and/or writing skills. A small number succeeded in passing a challenge test and waived the MAT 010 requirement. The 944 remaining students were enrolled in 44 sections of MAT 010, with an average class size of 21.5.

This writer used a cluster sampling method in which 11 of the 44 MAT 010 sections were randomly selected, and every student on each of those rosters was included

in the sample. A total of 257 active students and 54 students who had withdrawn before the tenth day were included in the sample.

Once the names were obtained from the final class rosters, this writer used data from the admissions office, testing center, and registrar's office to record the following information (when available) about each student in the sample: MAT 010 grade, whether the student had previously taken MAT 010, placement test score, number of areas requiring remediation, high school transcript information, and registration status for the spring 2000 semester. All of this data was recorded on an Excel spreadsheet and analyzed. The significant results of these analyses are reported below.

Course Outcomes

A primary concern is whether or not the students who took MAT 010 succeeded. For the students sampled, the result is not good. (See Figure 2.)

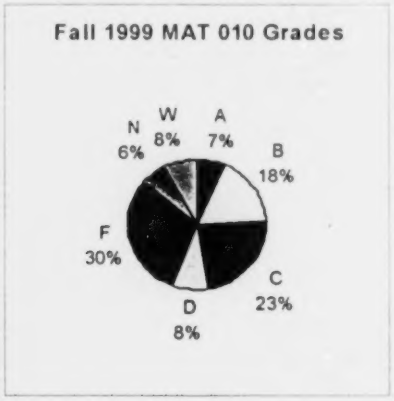

FIGURE 2

Success in the remedial classes is defined as earning a grade of C or better. Here we see that only 48 percent of these students succeeded in Basic Math. (A grade of N

indicates that the student did not attend enough classes to be evaluated, but he or she did not formally withdraw from the class. A grade of W indicates that the student withdrew from the course.) The sample-based estimate of a 48 percent passing rate has a 5 percent margin of error, which means that the true passing rate might be between 43 and 53 percent. Still, the estimated 48 percent passing rate is significantly lower than the passing rate in previous years. (See Figure 3.)

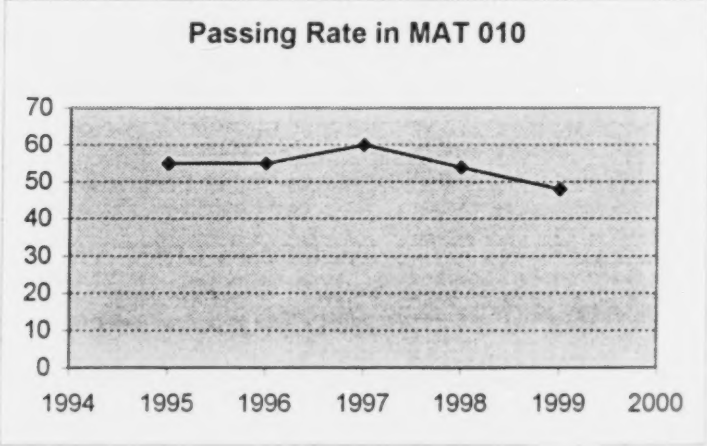

FIGURE 3

Thus, not only is there a dramatic increase in the number of students needing remediation in Basic Math, but there is also a decrease in the percentage of students who are able to pass the course. It appears that, despite the sweeping curriculum reforms that promise mathematical power to all students, the community college is faced with correcting deficiencies that have persisted in even greater numbers of students.

Many of the students who were registered for MAT 010 in the fall semester of 1999 did not return to the College for the spring term. The returning rate was higher for

the students who passed Basic Math, at 76 percent, versus a 41 percent return rate for the students who did not earn a C or better in MAT 010.

Based upon this sample, one may estimate that 57 percent of the 944 students who started in MAT 010 in the fall returned to the college for the spring semester (margin of error = 5 percentage points). However, if one takes into account that there were initially 1,441 students who placed into MAT 010, the return rate for the spring reduces to only 37 percent. The shrinking size of this cohort is illustrated in Figure 4.

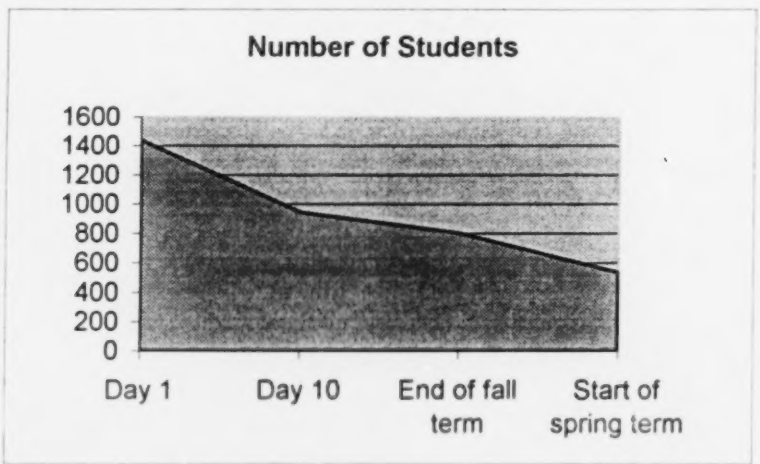

FIGURE 4

Characteristics of MAT 010 students

High school math background was available for 173 of the students sampled. Nearly 90 percent of those students had studied college preparatory math in high school. The breakdown is given in Table 2.

Highest HS Math Course	Count	Percent
Pre-algebra or general math	18	10.4
Geometry	59	34.1
Algebra I	27	15.6
Algebra II	63	36.4
Trigonometry	6	3.5

TABLE 2

Fifty-four percent of these students earned a C or better in their highest math course. The grade distribution by course is shown in Table 3.

Highest HS Math Course	C or better Count	C or better Percent	D or F Count	D or F Percent
Pre-algebra or general math	10	55.6	8	44.4
Geometry	27	45.8	32	54.2
Algebra I	13	48.1	14	51.9
Algebra II	40	63.5	23	36.5
Trigonometry	4	66.7	2	33.3

TABLE 3

Of the 173 students in the sample whose high school math courses were known, 19 students dropped MAT 010 by the tenth day of the fall semester. Seventy-two of the remaining 154 students, or 47 percent, passed MAT 010 with a C or better. This is not statistically different from the entire sample's rate of 48 percent. The passing rates by course are shown in Table 4.

Highest HS Math Course	Number passing MAT 010	Number failing MAT 010	Percent passing MAT 010
Pre-algebra or general math	6	12	33.3
Geometry	25	26	49.0
Algebra I	8	16	33.3
Algebra II	30	25	54.5
Trigonometry	3	3	50.0

TABLE 4

Though the sub-samples are small, a significant difference is found between the passing rates of the Algebra I and Algebra II groups (p-value = .04. This means that if the two percentages were truly equal, the probability of observing sample percentages as different as these is only .04.) The lowest passing rates here correspond to the lowest levels of high school mathematics. None of the passing rates, however, is satisfactory.

Though competency in basic mathematics is a prerequisite for all of the college-preparatory math courses, many students who had taken college-preparatory math courses in high school were unable to meet the minimum score of 73 on the computation portion of the Accuplacer exam. A computation score between 57 and 72 coupled with an algebra score of at least 40 will also exempt a student from Basic Math. It is puzzling that so many students who had successfully completed high school algebra or higher did not place out of MAT 010, given this additional option. In fact, the Accuplacer scores for the MAT 010 students were much lower than the cutoff score. The distribution of scores for the entire sample is shown in Figure 5.

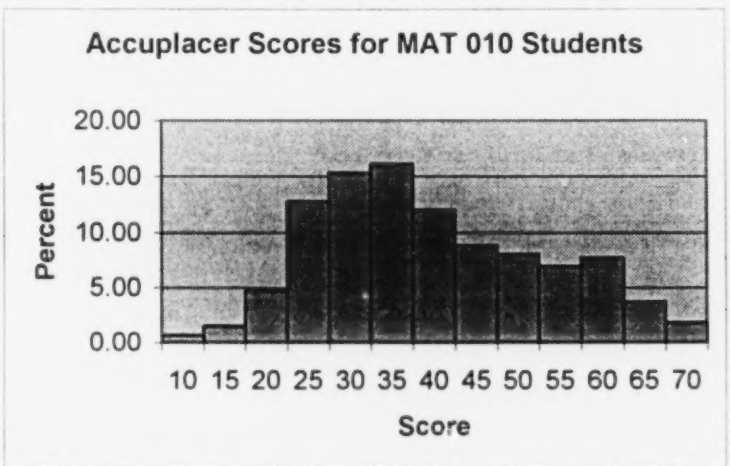

FIGURE 5

For the entire sample, the mean score is 39.2, the median is 37, and the middle 50 percent scored between 29 and 49. Data from the fall of 1997 indicate that the median and quartiles have dropped three or four points.

The Accuplacer results grouped by high school course for the 173 students whose transcript information was available are shown in Table 5.

Highest HS Math Course	Count	Mean Accuplacer Score	Variance
Pre-Algebra or general math	18	33.7	78.5
Geometry	59	39.1	176.8
Algebra I	27	41.4	152.9
Algebra II	63	43.1	181.4
Trigonometry	6	42.7	283.5

TABLE 5

A statistical test (analysis of variance) was performed to determine whether a significant difference exists among any of these means. With a p-value of .08, the data do not support a clear difference among the means. However, the Pre-algebra mean tested significantly lower than 39.2, the mean for the entire sample, while the Algebra II mean tested significantly higher. All of the means, however, are a far cry from the cutoff score of 73.

To determine whether the placement test scores served as indictors of future success or failure in MAT 010, further statistical analyses were performed. The mean Accuplacer score for those students who passed MAT 010 with a C or better is higher than the mean score of those who did not succeed in MAT 010. (See Table 6.) The difference between the means is statistically significant, with $p = .003$. (If the means for the two groups were equal, the probability of observing a sample difference as large as the difference observed here is only .003.) However, the variability among scores makes

it impossible to predict an individual's success or failure based on his or her placement test score.

Grade in MAT 010:	C or better	D, F, N, W
Mean Accuplacer score	41.45	36.52
Variance	180.15	159.76
Count	116	128

TABLE 6

Thirteen percent of the MAT 010 students in the sample were repeating the course for the second or third time. The passing rates for the repeaters and the first-time students were not statistically different (p-value = .47). In both groups, fewer than half the students earned a C or better in Basic Math.

Another area of concern is that many students come to the college requiring remediation in more than one area. English-speaking students are tested in reading, writing, arithmetic, and algebra when they enroll. Nearly all of the MAT 010 students require remediation in other areas as well. The sample results are shown in Figure 6.

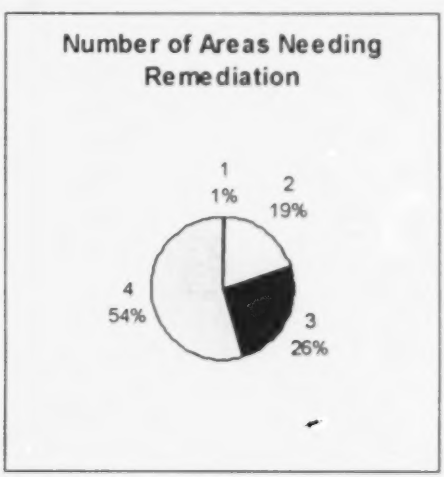

FIGURE 6

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With 80 percent of the students requiring remediation in three or more subject areas, and only 48 percent passing MAT 010, it is no wonder that the graduation rate at Middlesex County College has reached an all-time low.

What can be done?

There is a real crisis in remedial mathematics at Middlesex County College. With increasing numbers of unprepared students and high dropout and failure rates, the situation can seem hopeless. Many of the factors that contribute to this predicament are not under the college's control.

One area where the college can make a difference is in better communication with the school districts in Middlesex County. According to author James Rosenbaum[2], "Students' failures arise not from barriers inside colleges, but from a failure of colleges (and especially community colleges) to convey clear information about the preparation that high school students need in order to have a strong chance of finishing a degree." Because many students view the community college as a "second chance" institution, they may not take their high school work seriously or believe that it is relevant to their future success. Rosenbaum asserts that "Open-admission policies and remedial programs inadvertently convey to students that high school is irrelevant and that there are no penalties for poor effort" in high school.

Presently, the college is collaborating with two county school districts to make possible a smoother transition from high school to college. An ongoing project will examine the high school mathematics curriculum and incorporate changes that will

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The Quest for Early Childhood Literacy

Susan Stock
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May, 2000

The Quest for Early Childhood Literacy

New Jersey's Task Force on Adult Literacy, established by the state Commission on Higher Education (CHE) and the State Employment and Training Commission (SETC), has issued a report on the dangers of low literacy.

> A lack of literacy is directly related to the incidence of incarceration, dependency on public assistance, and a number of other social problems. Low literacy skills rob individuals of their future and undermine the economy of the state. In light of these realities, the findings in this report sound an alarming note: nearly one-half of New Jersey's adults (based on a 1994 survey of individuals age 16 to 64) function at the lowest levels of literacy as defined by the National Adult Literacy Survey.

There are 3 million New Jersey adults who function at the lowest levels of literacy. (The Union County College Master Plan 1999-2000 to 2000-2001). The National Literacy Survey defines the lowest level of literacy as "rudimentary.' Most adults in the "level one" category can, for example, pick out key facts in a brief newspaper article but can not draft a letter explaining an error on a credit card bill. Included in this category is a small subgroup of people unable to perform even the simplest literacy tasks. Level two reading tasks require locating a single piece of information in a text, comparing and contrasting easily identifiable information or integrating two or more pieces of information. Levels three, four and five require responses to increasingly challenging reading tasks.

In his book Literacy with an Attitude, Patrick J. Finn defines four levels of literacy. The lowest level is referred to as "performative." It involves the ability to "sound out" words and write sentences that are typical of informal face-to-face conversation. The next level is "functional." It involves meeting the reading and writing demands of an average day of an average person. Reading directions on a package label and writing a note to a teacher require functional literacy. The third level is "informational." It involves writing examinations and doing reports. The fourth level is "powerful." It involves creativity and reason--the ability to evaluate, analyze, and synthesize what is read.

Adult literacy is a problem in Union County as can be seen by the increasing

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percentages of UCC students requiring developmental reading, writing, and mathematics. Also the average placement test scores have been decreasing. Many of these low literacy adults are or will be parents whose children are likely to have low levels of literacy. Research indicates that the cycle of low literacy can be broken by exposing children to reading material and the pleasures of being read to at a very early age.

Early literacy experiences may include observing a parent reading a recipe or a letter or making and then consulting a shopping list. The child may see newspapers on the breakfast table, books on shelves in the living room and magazines in the bathroom. Educational Testing Service in Princeton, NJ has determined that there is a direct correlation between standardized test scores and the number and variety of reading materials available in a child's home. Additional research indicates that very young children who observe reading and writing activities in their homes realize that these activities are important factors in acquiring information and enjoyment (Concepts, Strategies and Skills Needed to Become Effective Readers).

In addition, the activity of shared book reading between parents and children fosters children's interest in and positive attitude toward reading and increases children's vocabulary development and knowledge of the world. (McConnell and Rabe) As children listen to the printed word, they develop a feel for the patterns, the flow, and the nature of written language. They begin to understand what reading is all about about and what it feels like. They begin forming concepts of books, print and reading (Emergent literacy Project, University of Idaho).

Other benefits of early book experiences include helping the infants' eyes to focus and aiding in their recognition of objects. The enhancement of listening skills, stimulation of imagination, providing a good reading model and establishing physical closeness are all important aspects of book sharing between very young children and adults (Sharing Books with Infants and Toddlers: Facing the Challenges, Barbara N. Kupetz and Elise Jepson Green, Young Children, January, 1997 p.22).

Parents who enjoy reading will start reading to a child as young as 3 months. They may read for a few minutes at play time, bath-time (waterproof books) and bedtime. The parent will point to illustrations and talk about them. From six to twelve months the child may be expected to reach for the book and bring the book to his

mouth. He will look at pictures, vocalize, pat pictures and show a preference for photos of faces. Interaction between parent and child will be face-to face as the parent holds the child comfortably and follows the baby's cues for "more and stop."
From 12 to 18 months the child may hold the book with help, turn pages several at a time and carry a book. He will point at pictures with one finger and may create labels by making the same sound for a particular picture. The child may demand control of the book, and may bring the book to be read.

Usually, reading will be cozy, warm and fun, but if a parent insists that the child listen, the child may insistently refuse. From 18 to months the child will be able to turn one page at a time and to carry a book around the house. The child will name familiar pictures; his attention will vary greatly; he will ask for the same story over and over and read book to dolls and stuffed animals. The parent will ask "What's that?" and give the child time to answer, the parent will relate the book to the child's experience and feel comfortable as the toddler's attention fluctuates. After the child's third birthday, he will hold the book without help and turn normal thickness pages one at a time. The child will describe simple actions, retell familiar stories, play at reading, move finger from left to right and top to bottom and scribble his name. The parent will ask "What's happening? The child's responses to the parent's questions will be validated and elaborated upon. The parent will show pleasure when the child supplies words (Reach out and Read Program Manual, 1995, Boston, MA: Dr. Barry Zuckerman).

During his early years, the child will be introduced to the local library where he will pick his own books or be helped by a friendly librarian. The Family will make trips to the library for programs, readings and special events. ("Pediatrics by the book: Helping children to love reading and books in the land of TV" , Perri Klass, MD and Steven Parker MD, Contemporary Pediatrics, August 1995).

Research indicates that making book reading fun and enjoyable by selecting books of interest to the child and responding to the child's interest will motivate the child to persist through the often difficult stages of literacy acquisition (Intergenerational Transfer of Literacy, Snow and Tabors).

Early literacy has become a focus of attention for a variety of professional, governmental, corporate and private non-profit organizations. The United States Department of Education produced an attractive booklet designed to develop a love of

reading in young children. The booklet *America Reads Challenge: Read*Write*Now!* includes activities for children from birth to preschool as well as beginning readers. Instructions to parents emphasize making story reading fun by changing ones voice, engaging the child in conversation about what the story was about and having the child guess what happens next.

Every child deserves to become a good reader--one who can extract pleasure, information and entertainment from the written word. "Start Early, Finish Strong: How to Help Every Child Become a Reader," a 1999 publication of the U.S. Department of Education, contains the following suggestion for ensuring that children learn to read:

> Entire communities can rally around their children for literacy success. This means more partnerships between schools and communities. It means greater engagement of private enterprises, colleges, universities and cultural groups. It means more volunteers and more opportunities for legions of mentors and tutors.

Nationwide, there are a number of libraries which offer instruction and support for low-literacy parents. I propose that Union County College's new Children's Library Collection be used to actively reach out to our students who are parents of young children and teach them and their children to enjoy reading. Few UCC students enjoy reading and they may not understand how to make reading a pleasurable experience for themselves and their children. These students need to be encouraged to become involved in the characters and the story they are reading and not to point at and call attention to individual letters and words. The choice of books is important too. The books on the shelves of UCC 's Children's Collection have been carefully selected and offer the best in children's literature.

The contribution that library services make in influencing young children's development of early literacy is described by McConnell and Rabe. Early literacy parenting classes based in libraries can contribute to early literacy outcomes. One program developed a book club intended to provide access to books and support for reading to parents of all literacy levels. During group meetings, parents read and discussed a children's book with a facilitator; then, parents shared the book with their children. (Home and Community Factors that Promote Early Literacy Development for Preschool-Aged Children, Scott R. McConnell and Holly L. S. Rabe).

The American Library Association (ALA) coordinates two major family literacy

projects funded by major corporations. One is The Bell Atlantic - American Library Association Project. Programs at local sites differ, but all involve collaboration among Bell Atlantic employee volunteers, local literacy providers and other community partners. The family literacy program of the Lebanon (Pa) Community Library includes parent/child literacy courses, the preparation of family reading logs and the distribution of bilingual books to Hispanic community organizations. At a Baltimore library adults receive literacy tutoring, then parents and children work together to enjoy books by using creative dramatics and storytelling.

Nation-wide, though, public libraries are underutilized--"only 37 percent of 3-to 5-year olds visit a library at least once a month (National Education Goals Panel, 1997). Yet, the Arts Education Partnership in conjunction with the US Department of Education's America Reads Challenge recommends that toddlers, 18 to 24 months, and their parents "build a library of books and take weekly trips to the local library" (Young Children and the Arts: Making Creative Connections, A Report of the Task Force on Children's Learning and the Arts: Birth to Age Eight, p. 9).

Colleges also sponsor family literacy programs. Joliet Junior College in Illinois has a Center for Adult Basic Education and Literacy (CABEL). In 1992 CABEL established the "Families About Success" (FAS) project. This project included children's basic literacy skills in a program designed to provide low-income, low-literacy parents and their children , aged 3 to 10 with a positive, interactive educational experience. Adults and children who participated in the program showed significant improvement in skills related to reading (The Joliet Junior College Center for Adult Basic Education and Literacy's "Families about Success: Intergenerational Programming That Works," Irby and others).

> A study published in 1989 examined the the effectiveness of an intergenerational reading project which attempted to change the reading behaviors of under prepared community college students who are parents and to affect the literacy environment of the home in ways that promote the literacy status of the parents/students and their children. The project consisted of a set of voluntary workshops in which children's literature was used to teach the adults how to read and discuss enjoyable books with their children at home. Subjects, five female low-income members of minorities ranging in age from 25 to 46 with above average participation in the workshops, were interviewed to explore the place of reading in their overall life context; the type of learning for parent and child that evolved from the workshops and from home reading, and

their attitudes toward the college experience. Results indicated that in every case, intergenerational connections were made; the parents read to their children, were stimulated to read more for themselves and applied the reading comprehension strategies in seeking to understand both the children's books and their own adult selections (Handel and Goldsmith).

I would like to replicate the Handel and Goldsmith study.

The Ely Stock Memorial Children's Collection at the Union County College Library officially opened on November 20,1999. Funded by an endowment and augmented by contributions of cash and books, the start-up collection of approximately 350 books will continue to grow. The collection is housed in an attractive, well lit area. The floor is covered with a brightly colored rug imprinted with letters, numbers and shapes. Child sized bean bag chairs as well as a four foot long cuddly stuffed lion provide comfortable spaces for curling up with books. Large posters of young, popular media figures clutching books adorn the walls. The collection emphasizes cultural diversity in its selection of books for children up to about age 10. As the collection grows, holdings for older children will be increased.

The opening celebration provided stories, songs, snacks and surprises for about 30 children and 30 adults including students, faculty and staff. Members of UCC's Student Volunteer Organization acted as story readers. The Student Volunteer Organization is very interested in continuing to participate in library activities promoting early literacy.

We are planning two more similar events for the coming academic year. We have recently been awarded a UCC Foundation grant to fund these events and to produce bookmarks and book bags imprinted with our logo.

UCC'S Division of Continuing Education has offered a parenting course called Get Your Kids Hooked on Books. The course offered parents-to-be or parents of children ages zero to five the opportunity learn how to help children gain a love for reading. The library's children's collection provided the books to acquaint parents with high quality children's literature while they were taught which books to buy and how to use them.

I would like to introduce a course which parents and children could attend together.

> Reading aloud is an activity fraught with advantages--for grown-ups as well as for youthful listeners--and it is a quintessentially relational activity....through the shared cultural experience of reading aloud and being read to, adults and young children--in moments of intensely pleasurable rapport--participate in the traditional task of passing on values from one generation to the next. (p. xiii, Spitz).

Children often accompany their parents as they register for courses. While waiting for counseling services, these children could be read to by student volunteers. Later, they could visit the children's collection and borrow books to take home.

On days when the college is in session and local elementary schools are not, children are present on campus. These days could be utilized for story sessions in the library and for special library presentations for parents and children.

In his forward to Inside Picture Books by Ellen Handler Spitz, Robert Coles, M. D. writes that when we are called to books we are reminded ...

> of their singular aesthetic power, their moral energy, their ability to reach us mind, heart, soul, to tell us about the world, to help us figure it out, and very important, to affirm our humanity as the one creature who has been endowed with language, who uses words to try to fathom the nature of things. Picture books are "signs" that help us start thoughtfully on this life's journey.

Spitz points to the importance of picture books in providing

> ...children with some of their earliest takes on morality, taste and basic cultural knowledge, including messages about gender, race, and class. They supply a stock of images for children's mental museums. Read by loving parents and respected adults or older siblings, they stand firm against later experiences (p.14).

> Parents as Teachers (PAT) is an international family education program for parents of children from birth to age 5. Parents learn to become their children's best teachers. Evaluations have shown that PAT children at age 3 have significantly enhanced language, problem-solving, and social development. PAT parents read more often to their children and stay involved in their children's education.

The PAT program includes home visits by trained parent educators, group meetings for parents to share successes, concerns and strategies, and family connections with lending libraries. (Start Early, Finish Strong: How to Help Every Child Become a Reader - July 1999; Raising Readers, p. 1. I would like to start a local

PAT program and use the UCC children's collection as the library connection.

> Reading aloud to young children is so critical that the American Academy of Pediatrics recommends that doctors prescribe reading activities along with other advice given to parents at regular check-ups.
> Dr. Perri Klass, Medical Director of Reach Out and Read, a national pediatric literacy program involving hundreds of hospitals, clinic, and independent practices, strongly agrees. "With confidence," says Dr. Klass, "I tell parents to read to their children, secure in the knowledge that there's good evidence that it will help their language development, help them be ready to read when the time comes, and help parents and children spend loving moments together. (Start Early...p.2).

Yet a national survey found that less than half (48 percent) of parents said they read or shared a picture book daily with their children ages 1 to 3. Only 39 percent of parents, read or looked at a picture book with their infants at least once a day. One in six parents of an infant (16 percent) said they do not read to their child at all (Young et al., 1966). Only 4 to 5 percent of adults are unable to read a children's book, although many more may be uncomfortable doing so (National Institute for Literacy, 1988).

The UCC children's collection could sponsor a family literacy program in which students who are parents would gain confidence and competence in reading, dramatizing and talking about books to their young children.

Applications for funding will be made to a variety of sources including The New Jersey Council for the Humanities.

The UCC children's collection is currently being used to augment instruction in Developmental Reading and Writing courses. One faculty member who teaches the lowest level developmental courses devised a worthwhile research project for students to use the children's collection. Students have been asked to research and write an essay on what children's lives are like. One aspect of the essay was to research what children's books tell us about childhood and the life experiences of children. This assignment could be used as a model for other instructors.

Another faculty member used the children's collection in his developmental reading class after the students had read articles in which a third grade teacher explored the difficult decisions he had to make in creating appropriate reading assignments for his students. The professor asked his students to visit the children's collection and then recommend books for third graders. Both professors noted

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unusual enthusiasm for reading as the students delved into the children's books.

The issue of enthusiasm for reading is an important one. In Raising Lifelong Learners, author Lucy Calkins observes that our country's literacy crisis, if there is one, revolves around children choosing not to read, but to watch television during the vast majority of their free time.

> A major purpose for reading aloud is to share and nurture a love of reading, to help our three-, four-, and five-year-olds to love reading, and to encourage our nine-, ten-and eleven -year-olds to continue to love reading. Many studies have shown that the home is the single most important factor in a child's literacy, and that being read aloud to by a parent is the characteristic most strongly associated with eventual reading ability. (p.33).

As we work with students who are parents on developing habits of reading to their children, it is vitally important to help them understand how to read not only to the children, but with them. Culkins lists some of the strategies we would do well to share with our students.

> Look over a book before actually reading a a page from it. From the title and cover, begin to surmise ideas about the book, including information about the topic of the book, how the book connects to our lives, and how this book connects with others by the same author or in the same genre
>
> "Read the pictures," surmising from them how the text will develop.
>
> Turn to the starting page, look again at the pictures, then put a finger on the first word and begin to read with the child, moving your finger across words left to right, down the page. On each succeeding page, look first at the picture, encourage the child to guess at what the words say and, if possible, help the child to look at initial letters and the length of the word to see if the guess seems reasonable.
>
> Pause frequently to make brief connections to our lives, to comment on the characters ("He looks mad, mad, mad!"), to wonder what might happen next, to notice obvious print conventions ("They made these words darker than the others, didn't they?")
>
> Most important, watch and respond to the child doing any of these things, and join him in the process of reading (p.89).

Early in the semester the college could devote a day or two to an "Open House" at the children's collection. Through English classes, students, especially those who

are parents, would be invited to a brief tour and demonstration of how to read with children. The tour and demonstration would be repeated throughout the day and evening. The students would be encouraged to borrow books and to form a reading experience club which would meet regularly to discuss their perceptions and feelings about reading with their children.

Many students who are not parents, work as baby sitters or aides in day care centers. The students would also have an interest in developing reading aloud skills.

A 1994 study provides useful data regarding the development, implementation,and evaluation of a reading program which could be adapted for UCC.

> The LAP Reading Program..."sought to provide low-income, inner-city kindergarten children with "lap reading" experiences (having adults read aloud to them) to increase their interest in and knowledge of books and reading. The 10-week program initially contained 25 children and 25 university students, who served as "lap tutors." The program also encouraged parents to read to their children at home. The LAP Reading Program succeeded in improving the children's scores on literacy tests and increasing levels of parent involvement in their child's reading (LAP Reading Program: Every Child a Reader, Connie A. Bridge and J. Paige Carney, Kentucky Univ., ERIC_NO: ED369550).

The books that fill the shelves of UCC's Children's Collection include board books for the youngest babies, picture books such as *Friends from the Other Side; Amigos Del Otro Lady*, with text in both English and Spanish; Julius Lester's *Black Folk tales*; *The Paper Dragon* by Marguerite W. Davol which includes Chinese characters; and The *Memory Coat* by Elvira Woodruff, a story of a Russian-Jewish immigrant family. The goal of the collection is to provide children with joyful experiences with books, to encourage emergent or early literacy and to aid in the development of adult literacy.

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ENDING BASIC SKILLS AS WE KNOW IT

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ENDING BASIC SKILLS AS WE KNOW IT

INTRODUCTION

During the past few years, the place of basic skills in college has been examined and challenged by the public and by the policy makers. Many feel that these programs do not belong at the college level and should not be offered. They feel that the taxpayers suffer in at least two ways. First they are forced to pay once again for subjects that should have been learned in middle school. Secondly, this leads to concerns about the quality and integrity of a college education.

In New Jersey, there have been attempts by the Legislature to push basic skills into the community college sector. In New York City, CUNY has phased out basic skills programs in the four-year senior colleges. Other states are also limiting basic skills opportunities. These events are questioning and evaluating the place of basic skills in the college curriculum.

This paper will examine the existing models for basic skills education at a community college. It will examine the practices and the effectiveness of these practices. From this analysis, recommendations will be made for how to improve basic skills instructional methods and program structures.

BRIEF HISTORY

Basic skills, along with transfer programs, career programs, and community development, is one of the major missions of community colleges. According to a study by the Institute for Higher Education Policy (1998), 100% of all public community colleges offer basic skills programs. It did not become an

important part of the community college sector until after the Second World War. The GI Bill provided opportunities for returning veterans to attend college. Many of these veterans lacked the appropriate skills to be successful at college. Programs were developed to assist the GIs. The Civil Rights movement, after the Second World War, contributed to the expansion of basic skills programs as more and more colleges opened their doors to underprepared minority students. In the sixties, with the advent of the Great Society and its "War on Poverty," and the opening of one community college each week, basic skills programs exploded.

BENEFITS

Basic skills programs benefit the students, the college, and the society. Students benefit both economically and socially (Institute of Higher Education Policy, 1998). Economic benefits include earning higher salaries, higher employment levels, higher savings levels, improved working conditions, and personal and professional mobility. Social benefits include improved health and life spans, improved quality of life for selves and offspring, better decision-making, increased personal status, and more hobbies and leisure activities.

The College benefits through retaining tuition and fee-paying students, maintaining the quality of higher education, maintaining the meaning and the integrity of degrees, and through students' contributions to the campus culture.

Society benefits through economic and social development (Institute of Higher Education Policy, 1998). Economic benefits include increased tax revenues, greater productivity, increased consumption, decreased reliance on

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government financial support, and increased workforce flexibility. Social benefits include reduced crime rates, increased charitable giving and community service, increased quality of civic life, increased social cohesion and appreciation of diversity, and improved ability to adapt to and use technology.

EFFECTIVENESS OF BASIC SKILLS PROGRAMS

According to Roueche, as cited by Len Lazarick (1999), reports of effectiveness of basic skills programs are sporadic, underfunded, and often inconclusive. There is a lack of evidence of how well students perform after completing these programs. Few colleges do any evaluation of their effectiveness. Adelman (1998) found an inverse relationship between the extent of a student's need for remediation and the eventual completion of a degree. Students needing five or more courses in basic skills graduated at a 35% rate versus 60% for those not needing basic skills. Students needing only two courses graduated at a 45% rate. This is an example of an inconclusive result because it indicates that there is some success with helping students overcome basic skills deficiencies, but there is still a significant difference between students needing remediation and students not needing remediation. If basic skills programs are to bring students up to the level of students who do not need basic skills remediation, it is clear that this hoped-for result is not happening.

CHARACTERISTICS OF SUCCESSFUL BASIC SKILLS PROGRAMS

Successful college basic skills programs are concerned with full personal development, not just the remediation of deficient skills. Cross (1976) stated

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that successful programs must specify clearly what is to be learned in an organized, comprehensive learning sequence, provide ample practice, support and encouragement, and provide feedback on performance through assessment. She makes five recommendations. The program should integrate skills, training, and instruction with other college experiences of the students. Attention should be given to the social and emotional development of the students, as well as to academic achievements. Staff should be selected for their interest and commitment to working with basic skills students. And remediation should be approached with flexibility and open-mindedness. (pp. 42-45)

Boylan (1986) reviewed several successful programs and identified the following key components and characteristics: provide a developmental context with a complementary learning assistance program; provide for both cognitive and affective development; provide for various levels of students' skills development; provide instructional delivery systems to support variable rates of learning and diverse learning styles; provide clear criteria and links skills and abilities acquired through preparatory study to those required in college-level courses; provide a full range of support services, such as personal development, study skills, tutoring, counseling and advising; and, provide multiple assessment before, during, and after entry into the college for appropriate placement, progress, and competence.

Roueche and Roueche (1993) identified several key components: a wide range of structured courses; awarding credit for developmental studies courses; flexible completion strategies; linkages between preparatory and college-level

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courses; multiple learning systems and varied instructional methods, combined with systems to monitor students' behavior and to provide timely intervention strategies; and, consistent program assessment.

Starks' (1994) review of research on developmental education identified important teaching and learning components of developmental programs. Starks identified eight pedagogical elements that contribute to successful developmental programs: use of cooperative or collaborative learning; use of electronic media to support learning; focus on metacognition or learning strategies; small classes; frequent student-faculty contact in the classroom; attention to students' personal learning styles; frequent evaluation of students' learning with continuous feedback; and, evaluation of teaching. It was also found that besides the traditional courses of reading, writing, study skills, and mathematics, such components as learning assistance, tutoring and assessment centers, supplemental instruction, technology, and evaluation were found to contribute to students' success and retention.

TRADITIONAL BASIC SKILLS PROGRAM COMPONENTS

Over the years, basic skills has evolved into the following components: assessment, placement, instruction, and program evaluation. What is interesting is that these components are mainly focused on remediation and tend to ignore the research-supported characteristics of successful developmental programs.

Assessment measures the students' abilities in reading, writing, computation, and algebra. Initially in-house tools were used to measure these

abilities. Since the early 1980s, commercially available basic skills batteries of tests are usually used. These are usually multiple-choice tests, with a writing sample. Recently, computer adaptive testing is replacing paper-and-pencil tests. The purpose of the assessment is to determine the students' strengths and weaknesses in the above areas, so the students can be appropriately placed in either basic skills or college-level courses.

After taking the test, the students speak with a counselor or advisor. Although much lip-service is paid to multiple criteria to placement in basic skills courses, if the students fall below a pre-determined cut score, they will be placed in the appropriate basic skills course or courses. There is usually an opportunity for the students to be retested if they do not agree with their placements.

Instruction tends to be organized around two approaches: vestibule or integrated. Each offers discipline-specific coursework. In the vestibule approach, all basic skills courses are organized under one administrator or department. In a sense, the students are not part of the "real college." The faculty tend to teach only basic skills courses. Tutors tend to run labs which are solely dedicated to basic skills. Upon completion of basic skills requirements, the students leave the basic skills program and enter college courses. At this point, the basic skills students are viewed as any other college students. In a sense, they have been fixed.

In the integrated approach, the basic skills are parts of academic departments. Reading and writing tend to be part of the English department; computation and algebra are part of the mathematics department. When the

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students complete the courses in the areas of their deficiencies, they are viewed as students without basic skills difficulties and are allowed to take college-level courses. In the integrated approach, students can take courses in the areas in which they have no deficiency.

Both of these approaches suffer from several similar problems. They view basic skills as something that can be fixed by taking a specific course or courses. Once the students pass these courses, there is no longer a need for continuing academic support. This is a naïve perspective. Many of these students will continue to have academic difficulties because their academic weaknesses are only beginning to be addressed. Another problem with these approaches is that the students resent being placed in these courses. They feel that they are being placed in the "dummy" classes and that they have the skills to be successful in college. Part of this is because they have yet to take a college class, and they don't know what skills they do need for success. They have yet to develop a reference for the skills and strategies needed to be successful at college. Another problem is that by grouping all the basic skills students together, they don't have a model for what a good student is. The skills and strategies being learned in the basic skills courses have no practical applications. They are for future use. They are abstractions. If the students are taught how to study for a test, there are no real applications of that skill to make it a real, meaningful activity.

Another shortcoming of these two approaches is the failure to integrate the students' learning. No one develops a total view of the students' learning

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needs. They are viewed as deficient in discrete areas with no crossover. In both approaches it is rare for faculty members from different disciplines to discuss individual students' needs. Because of these shortcomings, it is not surprising that basic skills students tend not to be retained and graduated from community colleges.

TOWARD A NEW BASIC SKILLS APPROACH

What is needed is a reformulation of basic skills. It must look at the students before they attend college and provide multiple paths for success once the student attends college.

Collaboration with Public Schools

One of the first things that must be done is to set up a dialogue between public school and community college educators. Presently, the skills and strategies needed to graduate from high school are not the same as the skills and strategies needed to be successful as a freshman in community college. The two groups of educators need to understand each other's needs and abilities so that a public school and freshman curricula can be developed to reduce the number of students needing basic skills programs. The high schools and the community colleges must meet to identify areas of mutual concern so that the high schools can be provided with feedback concerning the success, or lack of success, of their graduates. Without this dialogue, the mismatch of high school exit criteria and college entrance criteria will continue.

Both the high schools and the community colleges must work together to establish early intervention programs. These programs need to provide financial

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assistance and encouragement to the students, their families, and their communities. They must facilitate a seamless transition from elementary to secondary to higher education. Educators and community members at all levels must be involved in the development, coordination, planning, and implementation of such programs.

There exists three basic models. The first model is one of early intervention. It provides services including mentoring, tutoring, and information to help low-income and minority students to obtain high school diplomas and seek admission to college. It is operated by local educational districts, community organizations, and private companies.

The second model is the academic outreach program. This type of program is different from the early intervention program because it is operated by the college. It attempts to encourage students to plan for college. It, too, offers tutoring, mentoring, and enhanced educational experiences.

The third model is one of collaboration between K-12 and the community college. An example of this is the "middle college," which combines the last two years of high school with the first two years of college.

Authentic Assessment and Placement

Even with early intervention and dialogue, students will arrive at the community college needing basic skills. We need to move away from the band-aid medical model toward a model which integrates basic skills into the college curriculum and culture. Everyone at the college is a teacher and reinforcer of reading, writing, study skills, computation, and algebra. Curriculum needs to be

designed so that students can develop their academic literacy skills throughout their whole college career. Strategies and support services must be developed to achieve this goal. In this new approach to basic skills, assessment is still important. But the methods of assessment must change. They must move away from multiple-choice testing and toward the assessment of real academic learning tasks. An example of authentic assessment is to give the students an article to read, and to have the students write a response that states the author's main idea and supporting details and a critique of the article. Similar tasks can be designed for the other basic skills areas.

After assessment, the students will meet with an advisor or counselor who will look over students' performances on the assessment tool, high school records, perhaps high school folios, and who will then make the decisions on how best to place the students in college courses. There can be multiple paths depending on the students' abilities and experiences. Students who need a great deal of basic skills work may be directed toward learning communities. Students needing work in only one or two areas may be directed toward content-area courses which include integrated basic skills components. Assessment must be ongoing during the students' entire stays at the college, so that their progress or lack of progress can be determined and so that support services can be provided to enhance the students' successes.

Learning Communities

Traditionally, basic skills have been offered as separate, unrelated, and uncoordinated courses. Studies have shown that the more basic skills courses

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students need, the less likely the students are to be successful. These studies tend to suggest that the isolated courses may work for students needing one basic skills course, but they may not be effective for students who need intense intervention. An alternative approach may be learning communities.

Learning communities are an approach to curriculum design which coordinate two or more courses into a single program of instruction. Models range from clusters of loosely linked courses to single programs in which several courses have been so intertwined that the course divisions are no longer apparent. By making the educational experience more coherent and meaningful, learning communities foster a greater sense of affinity among learners, promote greater retention and achievement for students, are viewed as more compatible with the way people naturally learn, and are more relevant to the real world. Learning is raised to a higher level as students see the commonalties in thinking across several subject areas. Critical thinking is strengthened as students are exposed to multiple, and sometimes conflicting, perspectives on the same issue.

The students benefit because they enjoy a sense of community. They learn to think more critically. They are able to synthesize material from different disciplines. They experience personal growth. They achieve a greater appreciation of diversity as they interact closely with other students and learn from them.

There are two groups who would significantly reap the rewards of learning communities: those students with severe basic skills needs and students who need to apply skills and strategies that they have learned in basic skills courses

to college-level courses. Students with significant basic skills needs could be placed in learning communities that are centered around intensive language, mathematical, and self-development experiences. The program would focus on motivation and strengthen the basic skills and attitudes necessary for success in college. Perhaps the program could be centered around the concept of self-responsibility. All the reading, writing, math, and self-development exercises would focus on strategies to achieve responsibility for self. For the second group, the learning community could consist of a reading, writing, and content-area course. One of the problems with typical basic skills courses is that there is little transfer to real life context. By packaging basic skills courses with a content course, students are provided with an opportunity to apply the skills and strategies they are learning. These skills and strategies now have meaning for the students and they understand why they need to learn them. They are provided opportunities to practice these skills. As they practice within a real context, meaningful feedback can be given to the students so they can modify their performances. Learning of basic skills becomes more meaningful and motivating and is more likely to be transferred to other college coursework. The content course is more effectively mastered because it is learned through extensive guided reading and writing.

Learning Support Centers

A learning support center's primary mission is to assist students to learn more in less time with ease and confidence. This is typically achieved through tutoring in academic fields, learning skills development, and instructional

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resources including computers and software. They are open for all students at the college, not just the basic skills students. Because of this, they do not have the stigma attached to basic skills courses. They also provide services during the students' entire stays at the college, whereas basic skills courses provide support for just the first couple semesters. Learning support services consist of the following components: provision of reinforcement and enrichment activities for students in college-level courses, for example, computer-assisted, audiovisual, and interactive video; testing services to assess students' entry-level skills, learning styles, career aptitudes and interests; instruction in library and research skills; tutorial services for students seeking academic enrichment or who are experiencing academic difficulties; supplementary instruction for all students in such areas as speed reading, critical reading and thinking, study skills, college survival skills, and time management.

Supplemental Instruction (SI)

Supplemental instruction is designed to help students in historically difficult classes master course content while they develop and integrate learning and study strategies. Its goal is to improve students' learning, grades, retention, and graduation rates. All students are urged to attend SI sessions and, therefore, there is no remedial stigma attached to them. There are four key people involved in SI. The first is the SI supervisor, whose responsibility is to identify courses that would benefit from SI, gain faculty support, select and train SI leaders, and monitor and evaluate the supplemental instruction. The second key person is the faculty member who teaches the course. SI is only offered in

courses in which the faculty member invites and supports SI. The faculty member screens SI leaders for competency and approves selection. The third key person is the SI leader. The SI leaders may be students or learning center staff members who have been deemed course competent and have been approved by the course instructor. They have been trained in learning and study strategies. The SI leader attends course lectures, takes notes, reads all assigned materials, and conducts three to five out-of-class SI sessions each week. The SI leader is a facilitator who helps the student integrate course content and learning/study strategies. The fourth key members are the participating students.

Conclusion

To effectively help underprepared students to succeed, community colleges must go beyond the traditional basic skills program. It is not enough to offer courses in the beginning of a student's college career. Support must be provided throughout the student's entire stay. Colleges must incorporate such services as learning support centers, supplemental instruction, and continuous assessment to help students succeed.

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THE INTERVIEW AS A TEACHING/LEARNING EXERCISE

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HIS 520

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The Interview As A Teaching/Learning Exercise

Oral history is a unique way to learn about past events and experiences. It is a method that probes memory, evoking feelings that may have been long dormant. ...Students who listen to the voices of the narrators respond emotionally as well as intellectually. Oral history provides a duet of telling and retelling which captures the importance of history through an individual's life. The process of preparing an oral history often creates a special relationship between narrator and interviewer. (Wood, 92)

Oral history has been used successfully as a part of the teaching process in several disciplines for many years. Oral History, An Introduction for Students by James Hoopes is an example of a text designed to help students and faculty in the process of undertaking an oral history project. Hoopes describes and outlines the procedures for conducting oral history but more importantly defines the major human influences on us namely society, culture and personality as they impact oral history. His definitions of these concepts are:

> "Society" refers to the sheer physical fact that we
> live among other people who have at least
> partly the power to permit us to do some
> Things and prevent us from doing others.
> "Culture" is the category for essentially intellectual influences-
> the ideas, knowledge, customs, values,
> and attitudes (either learned or invented) – that enable us to

> see some possible avenues of behavior and blind us to others.
> "Personality," finally is the individual response to cultural and social influences, the idiosyncratic interpretation of them by our unique selves, with the result that we prefer one course of behavior to another. (33)

These definitions provide the basis for an interpretation of oral history. The oral history enables one to describe and understand the historical period and the literature written about its themes.

Numerous discipline-related journals abound with articles that discuss the values of oral history. Those that were examined were very positive in their evaluation of oral history and its effectiveness in giving students a realistic insight into history that the textbook could not have done. Wood, in describing the oral history of Rhode Island women during World War II explored the positive and enlightening effects of an oral history project for the interviewee. " The women talked about a time of crisis and hardship that had set a direction for the rest of their lives – experiences that no one had ever before asked them about in a way that made them realize how significantly those years had affected them." (Wood, 92) Grim, on the other hand, emphasized the benefits to the curriculum i.e. to involve students in the learning process, to teach them how to question ideas, to help them communicate and interact with each other, and to improve their analytical and critical thinking skills.(Grim, 15)

Surveys of students enrolled in the African American Literature class at Raritan Valley Community College over the past twenty years, reveal that almost all of them have never taken a course in African American Studies

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or African Studies prior to taking this African American Literature course. Therefore, it was necessary to devote some time introducing them to the historical background of African Americans. This contextualizing was continued throughout the course in order to give students a strong foundation and setting from which they might extract meaning from the literature assigned. "When students have not taken courses that examined the African American Experience, it is often difficult to engage them in conversations about theories pertaining to Black people. It is equally difficult to get them to apply concepts and critical thinking to course materials." (Grim, 4)

Introducing an oral history component into the African American Literature course was a strategy that enabled students to 1) learn firsthand the experiences of senior citizens who had been eyewitnesses to history prior to World War II and 2) comprehend the African American experience emotionally and intellectually. The oral history method was an excellent approach for these seniors to tell their story. The Metlar/Bodine Historical Museum in Piscataway provided an excellent opportunity to conduct the oral history component. By interviewing African American citizens of Piscataway and New Brunswick the students were able to use their reflections as a means of bridging the past and the present in a learning experience.

The Museum's mission has been to establish exhibits that reflect the historical and cultural artifacts of people who have inhabited the

Piscataway area from the earliest times. Many of these are archaeological and anthropological exhibits of early American Indians. Later, as Western European colonists settled the area, collections of tools, utensils, clothing, arms and ammunition were added to represent the impact that seventeenth through early twentieth century inhabitants have left on the region.

There is however, a dearth of cultural and historical artifacts of African Americans in the museum. It is widely known that many were among the early residents of Piscataway either as slaves on farms or as freedman. In the last half of the nineteenth century and early to mid-twentieth century, the population of persons of African descent in the Piscataway area increased. This was particularly true after World Wars I and II.

None of the students in the African American Literature Class had participated in such a project before. Therefore, it was necessary to orient them and the seniors to the process. First, the students were presented with a list of questions to ask the seniors. The instructor provided these questions to establish the initial standards for this methodology. The questions covered broad and specific issues of family life, education, work, civil rights, religion and life's accomplishments. (See Appendix for list of questions)

Second, the students had to rehearse the interview by practicing the process with each other. The students gained confidence in the interview

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process and learned the natural give and take of the conversational approach.

Third, the students were given a talk by one of the counselors from the Counseling Department who prepared them for the reactions of the African American seniors. For example, some seniors may be reluctant to share information that they considered to be personal or too traumatic to discuss. Others may talk incessantly about everything. The counselor also pointed out that some seniors might be reluctant to open up to white students. The class was 95 % white and most had no previous interactions with African Americans except for the instructor of this class and the counselor who conducted the orientation session. The students mirrored the demographics of the community in which the college is located.

Fourth, arrangements were made to ensure that the senior citizens were prepared to interact with the students. The Museum curators worked with senior citizen agencies and church groups in the New Brunswick-Piscataway area to solicit volunteers for the project. Some seniors who were acquainted with the Museum also helped in encouraging their peers to participate.

The senior volunteers were asked to bring documents, photographs or artifacts if they possessed any or if they thought it appropriate to do so. Transportation arrangements were made for those who needed it. The advance preparation on the part of students and seniors greatly enhanced the effectiveness of the interview process.

Two interview sessions were conducted at the Museum. These were followed by several interviews in the homes of some seniors who invited students to visit with them.

The advice given during the student orientation was dramatically borne out on the first visit with the seniors. On arrival, the curators mentioned to me that two of the thirteen seniors in the group had decided not to participate in the interview process. Nevertheless, we got acquainted with the other ladies and gentlemen, and very shortly a rapport developed as students and seniors sat in small groups at tables and began the interviews. After about an hour, the two individuals who had hesitated, began edging into the conversation at the table closest to them. Gradually, they became totally immersed in the group's interview and were genuine contributors to the oral history project.

The students conducted the interview with the original list of questions as a guide for eliciting information. However, they did not refer to the list often. As the interviewees talked they covered issues and topics that answered the questions spontaneously.

The observations and comments by students who interviewed the seniors demonstrated the power of learning through interaction with elders from an intergenerational perspective. The students' writing described the unique relationship between teller and listener, their interpretation of experiences, and the connection between the oral histories and the literary texts.

Interviews of Mrs. Atkinson who traced her ancestry back to the Revolutionary War were very enlightening. She had spent a great deal of time and money reconstructing her family history. Some of the problems encountered in trying to research a large family was the difficulty in obtaining birth and death records. The births and deaths of slaves often went unrecorded and when they were recorded they gave little information. Black male or black female was the entry on birth certificates rather than a person's first name. The dates were very often incorrect and slaves were given the last names of their owners, which contributed to the confusion of documents. Death records were also lacking. Cemeteries were segregated and often Black cemeteries were dug up, moved, abandoned or destroyed. It was practically impossible to determine the final resting place of loved ones.

Mrs. Atkinson's mother was actively involved in trying to get support for preserving black cemeteries for historical investigation. However, it is ironic that Mrs. Atkinson's mother and grandmother were reluctant to speak about the past. "Times were bad and we don't like to think about them" is what she was told when she sought information about her ancestors and where they came from.

After the abolition of slavery, it was the responsibility of the master to record births and it was adherence to this law that enabled Mrs. Atkinson to trace her ancestors through the Hunterdon County Clerk to a

"Roberts' family". She can document her ancestors' participation in the Revolutionary War and Civil War.

Mrs. Atkinson herself endured the challenges of a two and one half mile one way walk to school in all kinds of weather because Blacks could not use public transportation. She showed the interviewers pictures of the slave master her family worked for. She detailed the difficulties of working the land completing all tasks by hand.

All of these experiences are paralleled in the texts of the African American Literature Course. In Toni Morrison's Beloved set in the South between 1850 and 1874, the slaves and owners live on a plantation which resembles the "Roberts" place described by Mrs. Atkinson. One of the Sweet Home slaves, Paul D, was pressed into service during the Civil War.

Another senior, Mrs. Gataling, a New Brunswick resident for most of her life, related that, " She encountered the cruelties of prejudice, including name calling and taunting in the school system. Being a strong-willed person, she always defended herself and was often in trouble because of this." Mrs. Gataling's point of view is similar to that of the speaker in the poem, "Incident", by Paul Laurence Dunbar. In this poem an eight-year-old boy from New York City visits Baltimore for the first time. He tries to be friendly with another eight-year-old, but is called "Nigger". That's all he remembers of his trip South although he stays in Baltimore for seven months.

Mrs. Atkinson's and Mrs. Gataling's graphic explanations enabled the students to comprehend the impact of race and class on Blacks. W.E. B. DuBois in The Souls of Black Folk accurately defines it.

> Is a peculiar sensation, this double consciousness,
> This sense of always looking at one's self through
> The eyes of others, of measuring one's soul by the
> tape of a world that looks on in amused contempt
> and pity. One ever feels this twoness, - an American
> A Negro; two souls, two thoughts, two unreconciled
> Striving, two warring ideals in one dark body, whose
> Dogged strength alone keeps it from being torn
> asunder.(DuBois, 45)

Mrs. Atkinson credits her strong religious and moral upbringing with providing the strength to persevere within the context of society. A culture that taught respect of elders, abstinence from smoking, drinking and swearing and a moral code that forbid excesses of any kind set the tone for her life. Mrs. Gataling's grandparents were founding members of the Mount Zion Church in New Brunswick which is over one hundred years old. She is still a member of that church. These experiences parallel those of James McBride's family in the text, The Color of Water. Students are able to see the relationship between the slavery past and the importance of religion in the lives of African Americans.

Other interview similarities in terms of racism and identity can be seen in Ellison's Invisible Man and Baldwin's The Fire Next Time. The interviews of Mr. Matthew Waters and Mr. Elmer Trouttman reveal encounters with Jim Crow as children and later as young men particularly in the segregated Armed Forces during World War II. Mr. Waters said that

"Black soldiers while on KP were forced to shovel coal when German prisoners of war refused." While living in the South during the '40s, Mr. Waters witnessed many violent acts of racism including the burning of a cross in front of him.

The seniors also related the courageous responses of Blacks to the indignities and hardships of their lives. Several spoke about the Underground Railroad. They said "the underground railroad ran up route 27 in New Jersey. Many traveled that route from Princeton, New Jersey. The houses the slaves hid in had false walls and the slaves hid behind them or in basements that were undetectable. The readings also discussed the Underground Railroad. Paul Robeson's father escaped from slavery at age fifteen and made his way North via the Underground Railroad. In Beloved, Sethe and hundreds of slaves escaped via the Underground Railroad and found their way to freedom thanks to the many conductors and safe homes.

Students witnessed the personal impact of the interview when one of their classmates discovered that he was related to slaves on a plantation not far from the site of the Museum. His name was the same as one of the slaves on the list which belonged to Mrs. Atkinson,the senior whom he was interviewing..

Concurrently the students were moved by the emotional stamina of the seniors. As one student wrote in a letter to the senior she interviewed, "...Thank you very much for sharing your experiences as a young black

man living in Piscataway. It is certain that you have been and still are an inspiration to many people. I was able to see how proud you are of what you achieved and what you helped others to accomplish . Young people can learn a great deal from you. Just as much as you are proud of your accomplishments you are humble. That is a special quality which allowed me to see that you have a big heart..."

All of the students felt that their perception of African American history had been improved. By actually conversing with individuals of a different background, they could comprehend and empathize with their personal responses to the cultural and social influences of their youth. They could and did transfer that knowledge to a more insightful appreciation of the literature.

Oral history has proven to be a very effective teaching/learning strategy in the classroom. Students gained insight into the experiences of older individuals as they listened to their histories.

It became clear that it was possible to relate the texts to the oral history collected by the students. For example, the Delaney Sisters' biography became vivid as seniors recalled their experiences during the economic depression of the 1930's. Bessie Delaney was a dentist who practiced in the same Harlem office building as her brother, a Medical Doctor. In addition to her practice, she maintained the financial records of the office. Unfortunately, the Great Depression affected professional Blacks during this period. According to the Delaneys, relatively speaking,

they were not as severely affected as wealthy people in the white community. They were, however, victims of eviction. Bessie relates an incident when returning to her office one afternoon, she saw papers being blown down the street by gusts of wind. On close examination, she recognized some as the records of patients from the Medical and Dental offices which were occupied by her brother and herself. Upon reaching the building, she discovered that the white landlord had evicted them because their rent had lapsed, and the contents of their offices were dumped on the sidewalk.

This experience is also repeated in Ralph Ellison's novel *Invisible Man*. The young protagonist witnesses the eviction of an elderly couple in Harlem. As he observes the contents of the couple on the sidewalk while the falling snow covers them, he is overcome by emotion. The old man and woman were ex-slaves a fact affirmed by the yellowed documents of manumission or "free papers". There were other items spilling from dresser drawers and boxes that revealed not only their history, but also the history of all African Americans. This scene drew a large, hostile crowd in a very short time. The protagonist delivered a polemical impromptu speech that prodded the crowd to replace the belongings of the "dispossessed" couple back in the apartment. The crowd symbolizes the protestors of injustices in the African American community. They have seen their "dreams deferred" as the poet Langston Hughes said in his poem "Harlem".

The novel *Invisible Man* is an excellent work for relating the realities of the world as seen through the eyes of senior citizens. The book covers the generations in which they all lived. It spanned several important eras in American history, which touched significantly on all of their lives. Some could relate to the aftermath of the First World War and its effects on their families. Lynchings were common in the early 20th century in the Southern as well as Northern states. All interviewees related their encounters with institutionalized racism in the United States as civilians or as members of the Armed Forces.

Gloria Naylor's novel, *The Women of Brewster Place* is also another work that adequately illustrates the impact of the connection of the oral history with the literature. In this piece, the lives of seven African American women converge at an urban tenement after having come from varied backgrounds and having suffered an array of severe traumatic experiences. Their adversities include the pregnant teenage daughter who is driven from her home by an irate and disappointed religious, hypocritical father; the young Welfare mother who has babies "just because she likes the fresh new smell of the tiny infants". The strong-willed woman who would not acquiesce to the repressive Southern racial mores and customs becomes a resident of this neighborhood as does the idealistic college dropout who is determined to show the tenants that there is strength through organization and unity in fighting for their rights. There is the young woman

whose husband is irresponsible and has difficulty holding a job. He feels emasculated and blames his failure on his wife. His refuge and security is in alcohol while he abandons his family. Finally, there is a lesbian couple who is initially accepted by the community until rumor has it that they are "that way". Both women are shunned, and one is raped and killed by the neighborhood gang of young punks who terrorize the community.

The novel came to life for many students as seniors revealed their lives, particularly since a number of the students and the seniors had seen the television movie of *The Women of Brewster Place* with Oprah Winfrey playing the lead role.

The interview process gave students the opportunity to interact with senior citizens in recording their histories. During this process there was mutual sharing and learning. The assigned textbooks could not have provided this experience for the students. This exercise enabled them to gain insights into the realities of another person's life, specifically someone of a different race who lived at a time when the social, political and educational settings of the United States were vastly different.

The interview process helped to put the assigned readings in perspective for the students. As a teaching/learning exercise, it was successful in introducing students to a learning experience that they would not have been exposed to in a traditional classroom environment.

APPENDIX

African American Literature

ORAL HISTORY – BASIC THEMES
Makeup of family
Family traditions/holidays
Discipline
Childhood Games
Parents/Grandparents
Home Remedies
Teenage Years
Education
Role of Religion
Role Models Growing Up
Work Ethic
Marriage
Raising Children
Life in the South (If applicable)
Migration to the North
Depression Era
Discrimination/Racism/Sexism
Losses
Civil Rights Movement
Changes in Technology
Accomplishments
Major Life Lessons
Survival Techniques

Interview Questions For Oral Histories

Where were you born? Your parents? Your grandparents?
Where did you live as a child? What do you remember about your old neighborhood? Was it segregated?
What types of businesses did Black people own in your neighborhood?
How many brothers/sisters did/do you have?
What were your parents like? What kind of work did they do? What do you know about your grandparents and their ancestors?
What was the role of the mother and that of the father?
What's your favorite childhood memory?
What were your childhood responsibilities/chores?
What role did religion play as a child? As an adult?
How were you disciplined as a child? Who was responsible for disciplining the children?
What words of wisdom did your parents share with you?
What holidays were important to your family? How were they celebrated?

At what age did your parents die? Grandparents?

What kind of education did you have? Was there a schoolhouse? What was the schoolhouse like?

How has your education affected your life?

Please describe for me your teenage years.

What kinds of work did you do and for how many years did you work?

What do you think is your greatest accomplishment? the thing of which you are most proud?

How has being Black in America affected your life? Did you face discrimination/racism?

What are your memories of Martin Luther King? Of the Civil Rights Movement?

What struggles have you encountered in your lifetime and how have you been able to survive? What gave you/gives you courage to continue? What were your surviving techniques?

When and why did you retire? How did you decide what you were going to do with your retirement years?

What kinds of things do you do now, that keep you going and feeling hearty? What is your secret to longevity?

What are the most important values in your life that you would like to pass on to the next generation?

What's one thing you would have liked to have done, but haven't?

As you look back over your life, what is the essence of who you are?

What qualities that are you, do you now recognize in your children or grandchildren?

What advice do you have for parents and children of today?

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